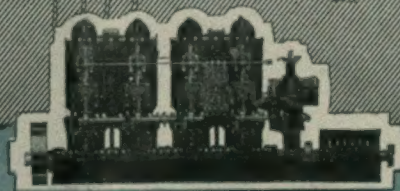


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THE CANADIAN FISHERMAN



THE FLYING DUTCHMAN



THE "GG" ENGINE

If a Gulowsen Grei Engine had been in existence in the days of the flying dutchman, it would have been the hidden power that drove so quietly and at such speed the phantom ship.

G. G. Heavy Oil Engines are known the world over for their low fuel consumption and quietness of operation while running at top speed.

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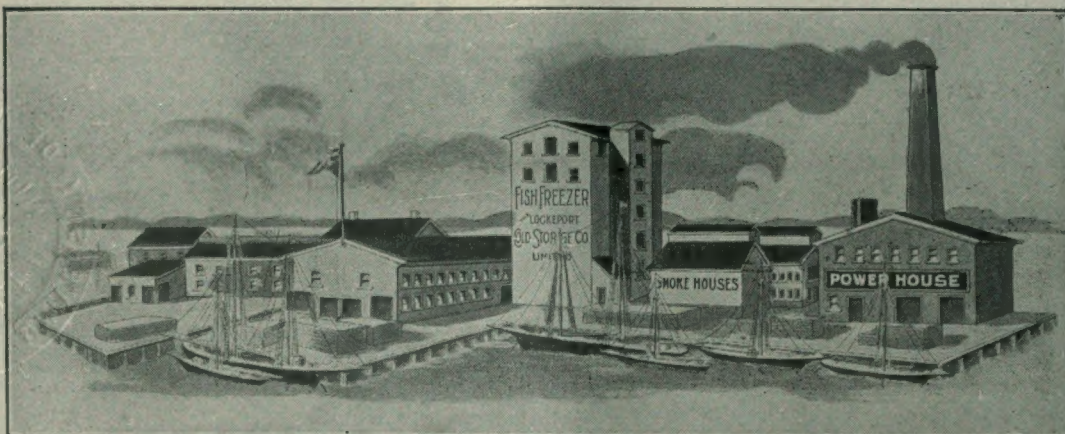
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LIMITED

W. M. Hodge. President.



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Cod - Haddock - Herring - Mackerel

--- Smoked ---

Fillets - Haddies - Kippers - Bloaters

Car lots a Specialty.

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It has supplied cordage since 1825, which is now used all over the Country.

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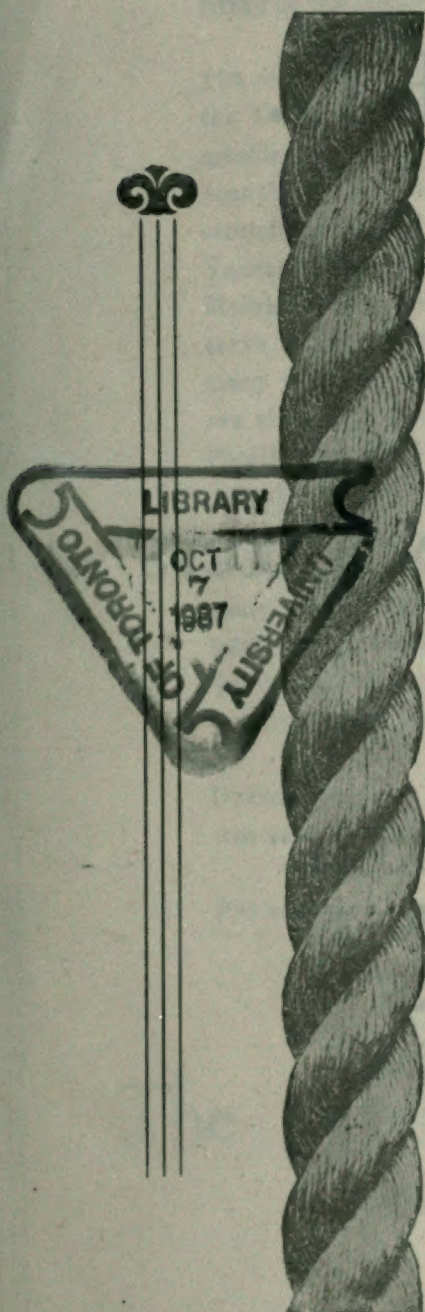
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ESTABLISHED 1825

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For information regarding British Columbia's Fisheries, write

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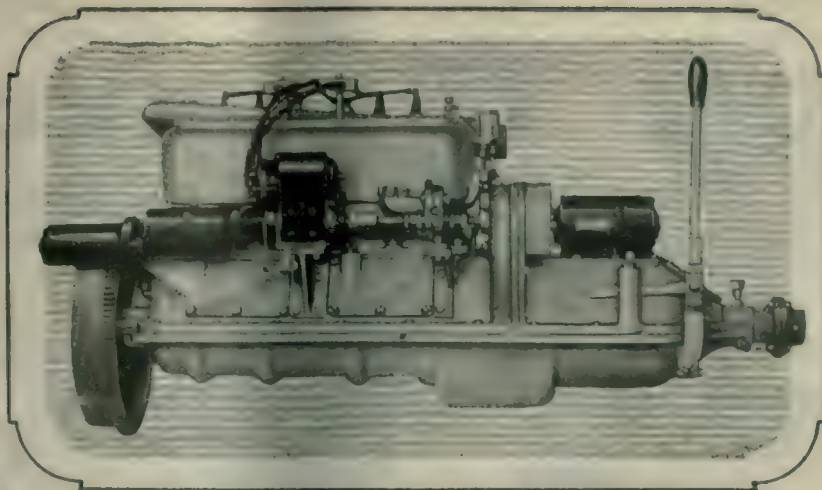
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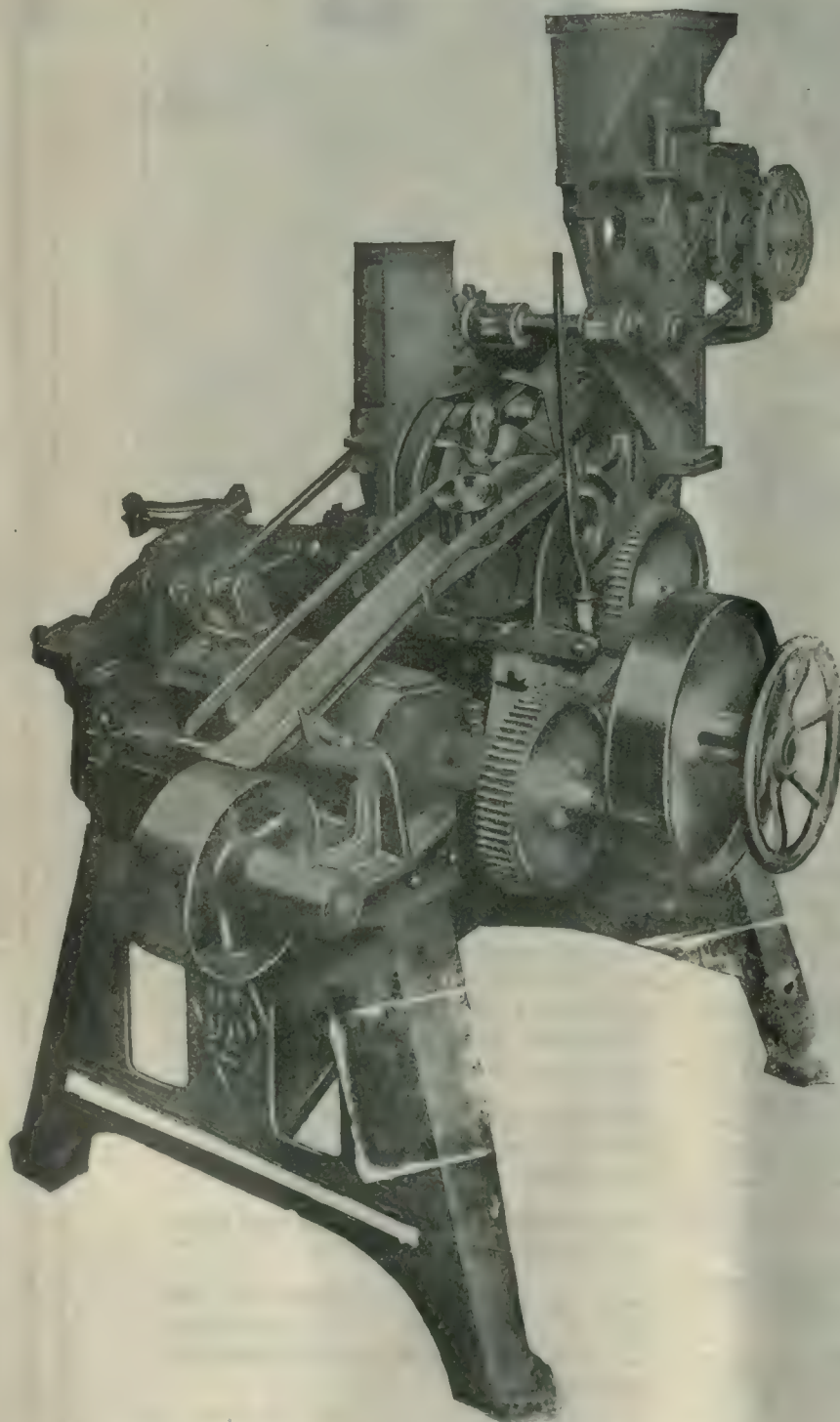
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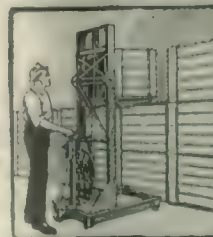
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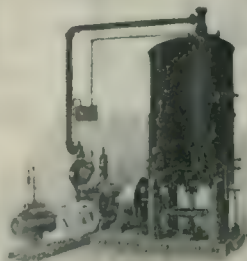
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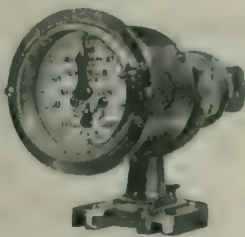
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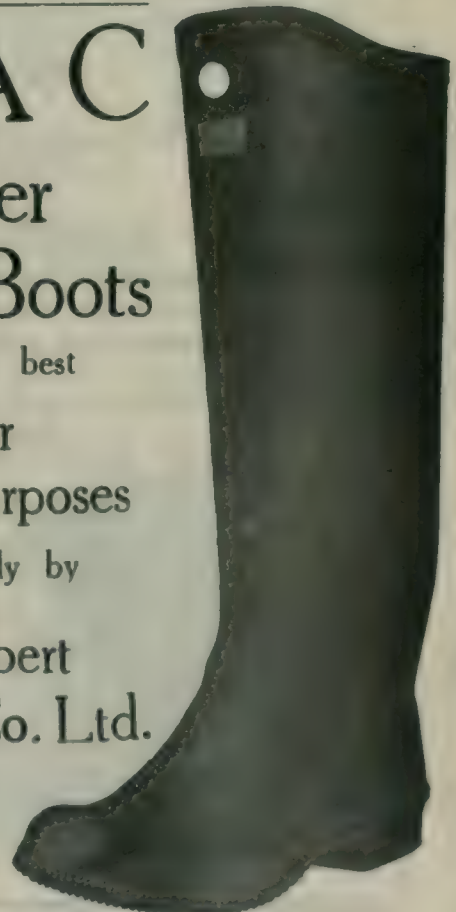
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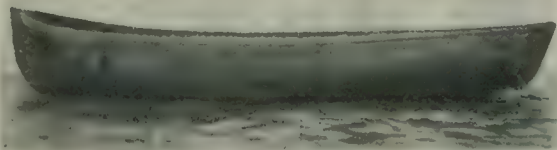
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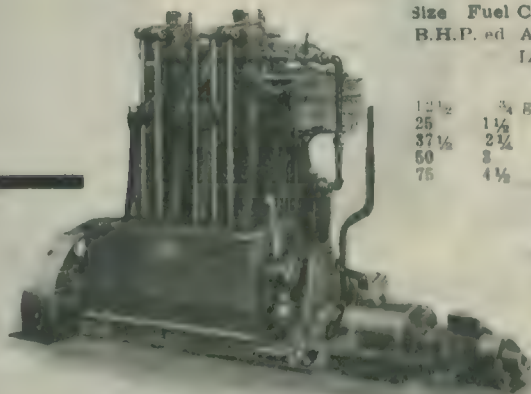
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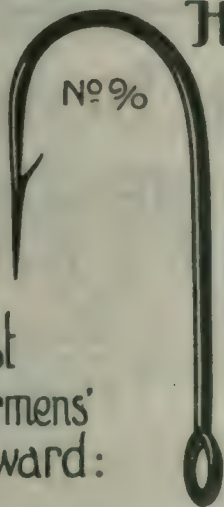
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award:



Right in Shape · Temper and Finish

Manufactured by

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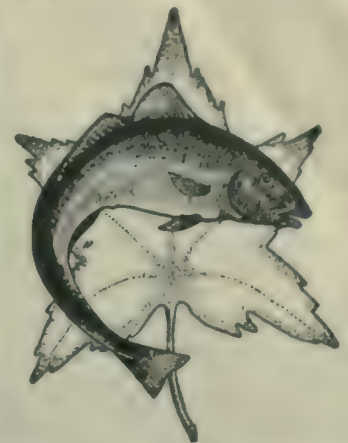
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JANUARY, 1920.



FREDERICK WILLIAM WALLACE
Editor



Ontario Government Fisheries Should Be Discontinued

The action of the late Ontario Government in engaging itself in the catching and selling of the fish of Ontario waters in competition with the regularly established fishermen and dealers may be characterized as an unwarranted interference with the rights of numerous citizens which has neither parallel or precedent to justify it. As a war-time measure, the fishermen and others whom it militated against, accepted the Government's fishery activities just as the citizens as a whole have borne other war-time measures, but not without indignant protest at the manifest injustice of the scheme, and the fishermen and those engaged in the fish trade feel that the time has now come—fourteen months after the conclusion of hostilities—for the Government's exploitation of the commercial fisheries to be abandoned.

The Ontario lake fishermen of all the Canadian fishermen are bound down with numerous severe restrictions. In the first place they are licensed by the Provincial Government: in the prosecution of the fisheries they have to employ expensive gear in the way of gill-nets or pound-nets, fishing tugs and boats, and their fishing seasons are limited. The work is skilled labor and since the war, cost of such labor has risen as well as prices for gear and equipment, but it will be found that the price of the fish sold nowadays by the fishermen has not advanced to the percentage of advance in gear and labor. Yet with these facts against them the Ontario fishermen at this date have to market their fish in competition with their own Provincial Government who have the advantage of being able to command twenty per cent of the Ontario fishermen's catch at any time to augment supplies: the advantage of setting a purchase price for such commandeered fish: the advantage of fishing in virgin waters such as Lake Nepigon where the Government maintains a fishery, and all the advantage which a Government has in competing with private individuals.

Even during the dark days of the war no other Province in Canada attempted such an exploitation of the fisheries nor was it tried in Great Britain. The principle of all enlightened nations has ever been to encourage the fishermen—not to handicap them by entering in competition against them. Just why the

late Government should select the fisheries, of all other food commodities the least important and least utilized by the people, is difficult to comprehend especially when Canada produces ten times more fish than the country can consume and when excellent fish, cheap in price, cannot be sold in home markets through lack of demand.

The whole affair started on a piece of mistaken philanthropy, when in 1917, the necessity of the day was to save meats for export to the Allies. It was at that time stated by a few irresponsible and uninformed persons that the fish of Ontario waters were unprocurable as they were all being exported to the United States by the Ontario fishermen. It is admitted that the best market for Canadian fresh water fish is in the States just as it offers the best market for our lobsters, halibut, smelts, and other sea fish and the United States markets for such fish has encouraged what little development there is in our fisheries as a whole, but to state that Ontario fish were unprocurable in the Ontario market had absolutely no foundation in fact and such a statement was not sufficient justification for the late Government's action.

It is not the high price (?) of fish which should demand the attention of the Provincial Government, but the high price of more indispensable commodities such as meats, eggs, flour, vegetables, etc. The late Government evidently felt that food problems in those particular lines were too difficult to tackle and turned to the fisheries as being an easier industry to exploit by reason of the fact that it is prosecuted by a few inoffensive individuals with no political organizations of any great power behind them, and the said individuals being under the heel of the Government by reason of the fishery license which is granted yearly. Withdrawal or cancellation of said license means the ruin of the fisherman holding same, and thus places them in a position of apprehensive tenure and inability to strenuously oppose or criticise the actions of the Government from whom they receive the right to fish. In a country boasting the free institutions such as ours, the position of the Ontario fishermen today is at once degrading and entirely out of keeping with the free-

dom and nobility of profession which has ever been the characteristics of fishermen the world over.

Since 1917, the fishermen of Ontario have been laboring under the handicap of Government competition while other basic industries developing natural resources have been free to prosper unhampered and to take advantage of enhanced prices—a state of affairs which all fair-minded persons unhesitatingly condemn. And yet the need of the present is to encourage the development of natural resources; to speed up exports of Canadian products that we may adjust adverse trade balances and pay our debts. The Ontario Government's fish policy is an excellent damper upon such efforts as far as the Provincial fisheries are concerned.

Of what benefit has the Government fish policy been to the people of Ontario? We would state emphatically that it has been productive of absolutely no real benefit whatever. Ontario citizens may have received whitefish, trout, herring and other species a cent or two a pound cheaper at times than if they had purchased the privately produced fish, but just what would this saving amount to in the aggregate? It is claimed by the late Government that the citizens of Ontario were saved the sum of \$160,000 during 1919 by its Fish Sales Branch. On a basis of three million population this represents the insignificant sum of five cents per capita per annum—a truly ridiculous economic parable with which to justify a Government commercial operation. A still more ridiculous aspects are contained in the facts that privately produced fish could have been sold at certain seasons at lower prices than that set by the Government; and also, with the prosperity of the average individual during the past three years, what economic advantages has it been to the people of Ontario in saving them a few cents a year upon a commodity which is by no means popular or indispensable, at the expense of its fishermen citizens?

It is sincerely to be hoped that with the advent of a new Provincial Government composed largely of men who are producers and harvesters of the soil that the petition of a sister industry—harvesters of the lakes—will be considered with that sympathetic appreciation which should exist among men who gain a livelihood through skilled muscular effort and who are at the mercy of wind and weather, and the policy of exploiting the fisheries established by the late Government be discontinued and the industry allowed to pursue its own normal development in the hands of the men to whom it is a livelihood and who have ever been the backbone of the Empire's Maritime Supremacy.

STANDARDIZATION AND INSPECTION OF OUR FISH URGENTLY NEEDED

Canadian firms interested in the exportation of our fish products are now realizing the handicap imposed upon their business through lack of standardization and inspection. A good start in this direction could have been affected by making the Pickled Fish Inspection Act of 1914 a compulsory measure, but owing to the stunted comprehension of a so-called Parliamentary Fisheries Committee, the Act was killed.

The Canadian Fisheries Association have made many representations to the Federal Fisheries Department to institute standardization and Government inspection of fish products. The officials of the Department fully realize the necessity and are wholly in accord with the desire of the Association, but they

point out their lack of funds and staff to carry out such inspection. At the present time the appropriation for the Fisheries Department has been ruthlessly pared in accordance with the Government policy to economize. It seems to us, however, that all the economizing is done with the Fisheries Department.

Mr. Henry B. Thompson, who has just returned from Europe where he acted as a member of the Canadian Trade Mission, impressed the writer with the necessity for standardization and inspection and vigorously condemned the quality and condition of some of the fish products which we have been exporting.

With a desire to remedy present conditions, President Brittain and Secretary Wallace of the C. F. A. had an informal interview with the Hon. C. C. Balfour, Minister of Marine and Fisheries, and strongly urged that something be done. The Minister realized and sympathized with the wishes of the trade, but pointed out that the enactment of such legislation was often painfully slow and there was absolutely no chance of introducing it at the coming session of the House. At the suggestion of the delegates, he promised to set a Departmental expert to work in framing up a set of standards for canned, dried, pickled and frozen fish. When this work was completed, the question of putting through a compulsory Inspection Act can be considered, and if the Government cannot undertake it, the Canadian Fisheries Association will endeavour to carry out the standardization and inspection work itself.

THE JAPANESE AND THE CODFISH INDUSTRY

Our United States contemporaries on both coasts have been devoting some space of late to the competition of the Japanese in the codfish trade. It appears that they are invading the markets long regarded as being wholly in the hands of American, Canadian and Newfoundland exporters and by reason of their low cost of production, they are able to undersell the white producers. We are cognizant of an increasing activity in the visits of so-called Japanese fishery students to Canada and the United States and many requests for information have been coming to us of late from Japanese sources.

The late war has been a stimulating factor to Japanese effort in numerous industries and we do not doubt but what they will make a determined effort to develop the Siberian and Behring Sea codfisheries and invade the American, West Indian and South American markets with their product. This competition is perfectly legitimate, but it is nevertheless a cause for alarm and our producers will have to prepare themselves for a fight to hold their markets.

We have seen numerous Japanese products and few of them can be characterized as being first-class—in fact, they seem to have very ably filled the place formerly occupied by Germany in the manufacture of cheap goods. We cannot hope by bounty or protective tariff to prevent Japanese competition and we might as well prepare to meet it in the only way it can be met, viz: by utilizing the most economical methods of production; by producing a better product and by catering a little more to the wishes of foreign importers.

The Japanese trade invasion may be the means of waking our people up to the necessity of curing our codfish on a higher standard than obtains generally at present and to bring our legislators into line for

the necessary action and encouragement of technical education in our fishing industry. The Japanese recognized this long ago and have spared neither expense or effort to develop their fisheries and educate their fishermen. The result of their policy is the present aggressive bid for larger markets and the fact that a nation which was regarded as being semi-civilized twenty years ago is now able to become a dangerous trade rival in many other lines besides fisheries is an indication that it is time for us to wake up.

It is not in keeping with Anglo-Saxon tradition or character to sit down and squeal at legitimate trade competition, nor is the hiding behind restrictive tariffs to be commended. Such only tend to encourage a condition of self-complacency—a lazy security which is fatal to healthy industrial effort. Competition is the life of trade and it is up to our producers to take stock of themselves and produce a better article in a better manner than heretofore.

Hundreds of opportunities have been pouring into Canada for extensions of export trade in fish products and the producers have been kept fully informed of same. Some of our people have taken advantage of them, but a good many have made absolutely no effort to secure the business, nor have they even acknowledged direct enquiries. Markets calling for specially cured and packed products have been ignored by us—but it is a safe bet they won't be ignored by the Japanese.

It is up to the firms affected, or threatened, by Japanese competition to overhaul their business methods and to insist on Government standardization and inspection of their products. It is also up to them to pay a little more attention to the development of the fishing industry along progressive lines. The Japanese menace is no figment of the imagination. Japan is like the Germany of the Orient and the Japanese are just as aggressive as were the Germans of pre-war days and the Japan of to-day is something to be reckoned with, for while other nations were fighting, Japan was busy building up a strong foundation for post-bellum world trade. At the same time the Japanese worker is no longer the underpaid cheap laborer of pre-war days. Standards of living have risen in Japan just as they have in other countries, and trades unions and high wages are becoming as much of a vogue there as in the white nations. These conditions do not make competition with Japanese producers an altogether hopeless proposition. We have faith enough in our people to believe that we can meet any outside competition if we take stock of ourselves and remedy our many faults.

STANDARDIZATION OF FISH NAMES

A final conference on the standardization of fish names was held in Montreal on January 24th, between officials of the Biological Board and the Canadian Fisheries Association. The list compiled by Dr. Huntsman and the suggested names were agreed to and Dr. Huntsman will proceed to embody same in book form. Photos of all the species native to Canadian waters will be shown accompanied with information relative to the habitat of the fish, their commercial value, scientific name, local name and the new standard name. When this book is published, it is hoped that the trade will adopt the new designation for those species which were erroneously named.

Under the new designations, Albacore will be changed to tuna; blue perch to cunner; lake herring

to cisco; pickerel to pike-perch; pike to jackfish; rock cod to rockfish; all the Pacific salmon to sock-eye, coho, spring, pink and chum; skate to ray; wolf-fish to richfish. Reasons for the adoption of the new designations will be given and the question will be taken up with the U. S. Bureau of Fisheries to institute similar standardization.

IMPORTED CANNED FISH MUST BE UP TO CANADIAN STANDARDS

As Canadian canners of fish and shell-fish are required to pack their fish under certain sanitary conditions and label and mark them in accordance with the Meat and Canned Food Acts, a recent Order-in-Council orders that all imported canned fish and shell fish shall be accompanied by an affidavit declaring that the packed product is manufactured from sound materials under sanitary conditions and the containers must show the name and address of the packer a true description of the contents and the weight as required by Section 12H of the Meat and Canned Foods Act.

The order goes into force on and after April 1st, 1920, and all importations of canned fish shall be subject to inspection when deemed advisable. Any such that does not conform to the regulations are subject to condemnation and confiscation.

SCIENTIFIC COUNCIL FOR THE EXPLORATION OF THE SEA

A letter recently received by President Brittain of the C. F. A. from a high fisheries official in Great Britain urged the inclusion of Canada in the International Scientific Council for the Exploration of the Sea. The Council has been in existence for some years and include fishery officers and scientists of the nations bordering on the North Sea. The nations belonging to the Council pay certain membership fees which are used to defray the expenses of fishery research work in European waters, and the work carried on has been of inestimable benefit to the fishermen of the countries interested.

The work of the Council, before operations were suspended owing to the war, were along the lines of collecting fishery and biological statistics; occurrences and distribution of eggs and young of food fishes; migration of older fish; fish food investigations and hydrographical investigations. In resuming this work it is the intention of the Council to extend its researches to the North Atlantic and it was felt that Canada and the United States should become allied with the Council as members.

The Canadian Fisheries Association are fully in sympathy with the objects of the International Council and have no objections to being allied with it, but we feel that we have certain tasks to accomplish in our own waters which can only be satisfactorily accomplished by the United States, Canada and Newfoundland acting jointly. The International Council is unable to do the intensive work which is necessary to our particular fisheries and it cannot do anything whatever on the Pacific—the fisheries of which are of the utmost importance to Canada and the United States.

This was recognized at the last Convention of the Canadian Fisheries Association when the following resolution was passed:

"WHEREAS there are large areas of Deep Sea fishing grounds off the Atlantic and Pacific Coasts of the Continent of North America where much scienti-

fic work might be done of value to the commercial fisheries particularly in the way of mapping grounds and determining the habits and seasons of the fishes which frequent them.

"AND WHEREAS this work is of mutual interest and value to the Fishing Industries of the United States, Dominion of Canada, and the Dominion of Newfoundland, and for other international considerations should be undertaken by these three countries. BE IT THEREFORE RESOLVED that the Canadian Fisheries Association in Annual Convention assembled respectfully recommends to the Governments of these three countries the formation of a permanent international scientific commission to collect scientific data, statistics of resources and production, and direct surveying of fishing grounds common to two or more of these countries."

The war naturally shelved the carrying out of this proposition, but we believe the time has now come to take the matter up and have the Commission formed. The question of allying ourselves with the North Sea Council was passed on to the Federal Department of Fisheries who replied that the suggestion of the Canadian Fisheries Association was by far the most favorable proposition, and should be acted upon first. When such a Commission was organized, membership and co-operation with the European Council was eminently desirable.

The views of the Department are in line with the views of the Association and we are hopeful that the organization of a Commission as outlined may be consummated during the year with the Governments of Canada, United States and Newfoundland. The Canadian Fisheries Association are making a move in this direction and look for the interest and backing of all members and the trade interested.

TO IMPROVE UNION OF FISHERMEN

Moses Nickerson of Boston, well known to Maritime Province fishermen, is endeavouring to improve the working conditions of the three thousand Provincial fishermen in the U. S. fishing fleets. His object will be to organize them on a sounder and broader foundation than exists at present and an interview with Lord Leverhulme has encouraged Mr. Nickerson to try and apply some of the great Englishman's principles in the new organization which will be known as the Fishermen's Foundation of North America. He is of the opinion that the wage system, the various lays or a mixture of both, is not a sure preventative of future labor troubles and he believes that co-operation such as obtains in the Lunenburg fleet and in Newfoundland is the only plan. The motto of the new organization will be "Self-help and self-reliance."

If Mr. Nickerson can succeed in establishing an organization which will promote a spirit of good will and mutual tolerance between capital and labor in the fishing industry; an appreciation of each others' work and troubles and rights, and a viewpoint broader in its conception of the industry and its development, he will have accomplished something eminently desirable. Fishing is a noble occupation and its workers should be imbued with the spirit of pride in their trade and its relation to the country's development. On the other hand employers should recognize that the fisherman is a skilled worker who, through the onerous nature of his occupation, is deserving of every consideration in the improvement of remuneration and living conditions. Co-operation is indeed the only

PISCATORIAL PARAGRAPHS

The U. S. lobster bill which threatened the Canadian exports in the live product has evidently failed to materialize.

Don't forget that the Annual Convention of the Canadian Fisheries Association will be held in Vancouver on June 3rd, 4th, and 5th. The Minister of Marine and Fisheries, Hon. C. C. Ballantyne has promised to attend if the Parliamentary session closes in time.

According to reports, the wooden otter trawler is not a successful type of fishing craft in the Canadian fisheries. One vessel intended for fishing has been altered on the stocks into a cargo carrier.

Cold storage accomodation for at least fifteen car-loads of perishable products would be of advantage to the exportation of fish in the vessels of the Canadian Government Mercantile Marine. A market exists for Canadian smoked fish in Australia and no doubt frozen fish such as salmon, halibut, etc., could be profitably sent south were the facilities provided.

PORTO RICO FISH MARKETS

(Reported by A. Escudero and Co.)

San Juan, January 6.—The prices on Fishstuffs as reported under date of the 31st, ulto. remains unchanged, with an overstocked market tending to decline.

The Board of Health have ordered the destruction of several lots of Fish we know that others will be destroyed shortly.

We are selling the stocks that we are holding for account of some of our good friends, at market prices and while the sales are slow and confined to small parcels, we hope to be able to get rid of everything we have on hand, within a reasonable short time, and without the intervention of the Board of Health.

To the best of our knowledge the quantity of Fish now in Porto Rico, is enough to supply our needs for over a month.

To all our friends we suggest to prepare some Fish and have it ready for shipment, some time during the second fortnight of March, as we are anticipating satisfactory prices on account of the Lent Season and the extraordinary consumption during the Sugar Cane Grinding Season that have just started.

LAKE ERIE FISHERMEN'S CONVENTION.

The Annual Convention of the Lake Erie Fishermen's Association will be held in St. Thomas, Ont., on the 10th, 11th, 12th of February. Many important matters will come up for discussion and interesting papers will be read at the session. An effort will be made to consolidate all the fishery associations of the inland waters into one representative body. A full report of the Convention and proceedings will be published in the CANADIAN FISHERMAN.

Developing Our Fisheries

New Fisheries Division Solicits Co-operation of the Industry

Ottawa, Jan. 12.—The fishing industry in Canada is merely in the embryonic state of development.

The Government has instituted a Publicity and Marketing Section of the Fisheries Branch, Department of the Naval Service, with the object of accelerating production domestically and in foreign fields, to a standard compatible with the status of Canada as a fish producing country. In this work, the new Division is rendered powerless without the earnest and closest co-operation of the producers and exporters. There are many matters, such as transportation problems, which are of mutual interest to all producers. Then, again, there are other questions of direct interest to certain sections of the country only, the nature of which is quite obvious to the producers themselves. Amongst these factions there must be a large degree of tolerance, for it is useless to develop one branch of the industry to the detriment of another.

When the occasion arose recently that the express companies sought a tremendous increase in rates, the producers stood together, because it was for their direct mutual concern. Should they hereafter co-operate to a similar degree in all matters affecting the industry as a whole, the work of this new Division will be made less difficult.

It has been quite clearly shown that it is impossible for an individual producer to develop foreign markets thoroughly, just as much as it would be out of the question for an executive officer, say of an army, to achieve success without consultation or conferences with his superior confreres and subordinates. In other words, co-operation is the keynote of success. Let producers get together for the common cause, which is not after all their cause alone, but the cause of the people generally. At the same time, it is not even intimated that producers should relinquish individual competition. Competition and co-operation are not opposites by any means.

In its effort to develop local and foreign markets, the department hopes to enjoy the sympathy and support of all producers. There will, no doubt, be many occasions when the officer in charge of the new division will call upon them for opinions and information. On such occasions producers will realize, it is hoped, that he is endeavoring to secure data for no other purpose than to accomplish improved conditions for the industry, and, consequently, for the producers themselves.

The Department is continuing the work in foreign markets which was inaugurated by the Canadian Trade Commission. That body, producers will recall, got into direct communication with fish producers all over the world, and made an effort to bring them into direct contact with the Canadian producers. While this work has borne fruit in a few cases, the general result has not been at all satisfactory. It has been found in a great many instances that producers did not interest themselves in these trade enquiries, and it is feared that the great handicap is the number of middlemen between the producer and the ultimate consumer in foreign fields.

Producers generally have been circularized by the Department, asking their co-operation and it is hoped in the near future to have the officer in charge of the Division meet the various associations of producers, packers, etc., for the purpose of discussing matters of mutual interest. It is proposed to place a programme before them, and perhaps in some instances financial, as well as moral co-operation will be asked.

Market Conditions

It is of little use to tell producers of conditions obtaining in the local markets. They are aware of the unsatisfactory state of transportation. They know that a few species of fish are in ready demand, while at the same time other species just as nutritious and just as palatable are practically unknown, or shunned. Improved transportation will help in large measure to overcome the difficulties, and a campaign of practical demonstrations should serve to popularize species not now in demand.

As to the foreign markets, it is an understood thing that the trade has suffered because of careless preparation and shoddy packing. The latter applies as well to Canadian exports in other lines. Producers must be brought to realize the value of choice preparations and neat packing. Regardless of the quality of the contents of packages of similar food, the attractive container ninety-nine times out of one hundred will sell first. Where there is quality behind it, the buyer is going to be impressed, and a market is right there created.

Similar deficiencies appear in other quarters, and it would be in the interests of producers to remove them. Fish of fine quality for instance, thrown carelessly into a barrel and salted, will certainly not stand competition with fish of less fine quality nicely prepared and neatly packed. The Canadian Trade Commissioner in Spain, according to a recent bulletin issued by the Department of Trade and Commerce, makes reference to the fact that Canada has lost an important market for codfish in Spain. It is of interest to note that he attributes the failure of Canadian products simply to shoddy packing and careless preparation, and neglect to respect peculiar conditions existing there.

The article itself, taken from Canadian waters, is equal to—yes, in most cases superior to—a similar article taken from other waters. If it could be placed in foreign markets just as it is taken from the water, or just after it has been treated by our finest processes, the demand for Canadian fish would be tremendous. To have our fish packed and treated in a manner equal to, if not superior to, processes employed in other countries, would be to overcome ninety per cent of the difficulties. Even it is not too much to say that a considerable difference in price would not tell against us. At the same time, it is of paramount importance that producers should bear in mind that the minutest whim of the outside consumer, whether as regards packing, preparation or mode of marketing, should be respected.



Fish Curing

By J. J. COWIE.

VII.—COD.

Salting and Drying.

In curing fish of whatever kind, and by whatever means, it is necessary, in order to produce a cured article of the highest grade, that the preservative be applied while the fish are perfectly fresh. In so far as the curing of Canadian cod is concerned there is this to be said that salting operations almost invariably take place under this primary essential condition. Whether the fish be taken by vessels on the offshore bank or by boats near the shore, they are split and put under salt, as a rule, the same day on which they are taken from the water. And so, with no extra cost other than careful attention to the details of splitting, washing, salting and drying, Canadian curers should find it easy to produce, for any market, the finest possible quality of cured cod.

Beheading and Cutting:—A heavy sharp knife should be used for this purpose. The fish should be laid back down on a bench or splitting table and grasped, over the mouth, by the left hand. The knife should then be inserted underneath the gill covers and the head separated from the body by a circular cut to the left, not a straight down cut. The shoulder or lung bones should not be disturbed. When the head has been detached, the knife should be entered at the throat and run in a perfectly straight line down the centre of the belly to the vent, and the entrails cut away and removed. The liver should be detached and placed in a separate receptacle to be afterwards reduced to oil; also the roe, when in season, should be kept separate and disposed of fresh for food, or salted and shipped to France or Portugal for sardine bait. The beheaded and gutted fish should be dropped into a tub of clean water, from which they are lifted to be split.

Splitting:—The gutted fish is laid on its side on a bench or table, and with his left hand grasping the upper 'lug' the splitter enters the knife at the top of the shoulder, and keeping close to the bone, runs it down to near the tail-fin. The point of the knife should not be allowed to penetrate all the way to the skin on the back of the fish. The knife should now be entered under the bone at the shoulder and run along towards the tail separating the fish from the bone as far as the blood cavity or to within twenty or twenty-two joints from the tail end, where the bone should be cut through two joints in a slanting direction, leaving the sloping end of the home in the form of the figure 8. The detached end of the bone should then be taken in

the left hand and the knife run along under it until the bone and fish are completely separated. A slight incision should be made in the blood cavity of the part of the bone that is left. It should not be necessary to add that only the best steel knives, kept always in the sharpest condition, should be used in splitting cod, to avoid ragged fish.

Washing:—This should be carefully performed. A small scrubbing brush should be used, by which any blood remaining on the bone, and slime on the skin, should be scrubbed away; also the black lining of the inside of the "lugs" should be carefully removed. If splitting, salting, and washing cannot be carried on at the same time, the washed fish may be piled on wooden gratings where the remaining water or blood may drain off.

Salting (on shore):—The fish may be salted in rectangular vats made specially for the purpose, of concrete or wood; or they may be salted in ordinary puncheons or in tubs made by sawing a puncheon through the centre of the bilge. But whether vats or puncheons are used they must be perfectly water tight. Each fish must be wholly and evenly covered, back and face, with salt, and laid back down, except the fish in the top tier, which should be back up. In laying the fish in salt care should be taken to see that they lie perfectly flat, otherwise, they will assume and retain a twisted form. If puncheons or tubs are used the fish should be laid with their tails toward the centre. When the salt begins to dissolve into pickle and the fish to float, a weight of some kind should be placed on the fish to keep them always under the pickle. If the puncheons are kept in the open they should be covered in such a way as will completely shelter the fish from the sun and more especially, rain. The fish should be left in the salt for five or six days, at the end of which time they will have absorbed about all they will ever take of it.

Salting at Sea:—When fish are split and salted at sea what is known as dry-salting has to be adopted. The fish are laid out flat as in salting into vats or puncheons on shore, but they should be salted more heavily. The main thing in dry-salting is to see that plenty of salt is used and that all parts of the fish, especially the edges of the shoulders and sides, get an equal amount of it.

Washing the Salted Fish:—When the fish have been removed from the salt, and before they are laid out for

drying process to begin, they should be washed. All slime should be scrubbed off the skin and any remnants of the black lining of the 'lugs' picked off; also, blood marks on the bone or elsewhere should be brushed away.

Drying:—The drying process may take place on a suitable beach of fairly large stones, or on wooden frames erected for the purpose. The use of wooden frames is preferable, as the drying air gets at the fish from below as well as above. Suitable beaches are not common, but even if they were, frame drying should still be preferred because of the danger of scalding in laying fish out on hot stones.

Convenient portable flakes may be made in sections of about 12 feet in length, 3 feet in width, on supports about 2½ feet high. The top of the flake may consist of either wooden three-sided bare, with a suitable space between each, or strong galvanized wire netting. The wire netting when available is to be preferred. It is more cleanly and less clumsy to handle.

When the fish have been washed and made ready for drying, they should be laid out in flakes back down, at first, but when they take on some degree of firmness they should be turned back up occasionally. Towards evening of the first few days the fish should be gathered into small heaps, back up. Later, when they become harder, more fish may be piled on each heap and covered to keep dampness out.

At the end of two week's drying, the fish should be collected into large piles, and covered with a water-tight cover. On each pile should be placed weights sufficient to press the fish into a uniform flatness. The fish should be left in this state for about ten days. This is necessary in order to produce good looking fish, and to properly complete the process of curing.

The fish should then be further dried for five or six days and again be collected into piles and pressed for a couple of days, after which another good day's drying should be sufficient.

Before finally lifting the fish from the flakes for storing, care should be taken to see that they are perfectly cool. The place of storage should be dry and cool, and the fish when piled therein should be covered to protect them from dust, etc.

It should be understood that the length of time stated herein for salting and drying, is for the average sized, full-grown cod. Small and thin fish can be salted and dried in less time. The curer must, of course, use his own judgment in this matter.

The foregoing method is alike applicable to the salting and drying of hake, cusk, pollock, and haddock.

Drying by Artificial Heat.

It will, probably, be admitted by all fishermen that drying by natural heat, in other words by sun and air, produces the best cured fish. The natural process, however, has some very important disadvantages. It is a slow process, and on certain parts of the coast where fog and rain occur frequently, it is sometimes next to impossible to successfully dry fish by that means. In any case it is the cause of much anxiety for weeks on end. Drying by artificial means, on the other hand, can be carried on anywhere and at almost any time of the year, during both day and night. Moreover, the actual drying time can be shortened by this means from three weeks or more to about four days. Artificial drying requires a building in which temperature of from 70 to 75, or even eighty, degrees

Fahrenheit can be maintained. This heat may be obtained by steam or hot-water piping, or by the direct heat of fires.

Heating by steam calls for a somewhat elaborate system of piping on which is placed wire trays containing the split fish. It is advisable, if at all possible, to give the fish a good day's drying in the sun and air before submitting them to the steam heat. After two days, that is 48 hours, drying over the piping in a continued temperature of 70 to 75 degrees, the fish should be gathered into large piles and pressed, by weights on top of each, for ten or twelve days. They should then be once more laid out over the steam pipes for another two days, at a temperature of about 75 degrees, after which the drying should be complete. There should be suitable ventilators in the building to carry off the moisture.

The cost of installing a steam heating plant would probably prevent small curers and individual fishermen—these make up the majority of cod driers in Canada—from adopting this method. Fortunately, the method of drying by the direct heat of fires is quite as effective as the other, and can be put into practice with little expense.

For cod drying on a small scale a shed, 30 feet long, 10 feet wide, with walls about 8 feet high, the framework of which is sufficiently strong to bear the weight of the wet fish when hung up, may be utilized. The floor of such a shed, however, should be of concrete, brick, or flat stones.

There should be two ventilators on each side, near the apex of the roof, with ropes running down the inside walls for opening or closing them as required; also, there should be two shutter ventilators in each wall just above the floor, for regulating the draught. A window on each side of the building is necessary to let in light.

Bare about 4 inches square and as long as the building is wide, should be laid across the building, the ends about 15 inches apart and there should be as many as the length of the building will accommodate.

Into both sides of the bare, that is the sides facing the ends of the building, should be driven small galvanized iron hooks. To each of these hooks a fish is fixed near the root of the tail. More fish may be hung on a bar, if it will stand the weight, by fixing one fish by the tail and the next by the shoulders, and so on.

As heat must be raised with the least possible amount of smoke and dust, coke fires should be made use of entirely. As it is sometimes necessary to move the fires from one part of the building to another, in order that all the fish may get an equal amount of heat, they should be contained in movable grates—for example, an iron wheelbarrow could be converted into a grate for this purpose. The grates should be covered with an iron plate from which the heat will be thrown off. Two such fires will be sufficient for a building of the size herein mentioned. The fires should first be lit outside of the building and allowed to become completely red before being wheeled inside when a fire requires fresh fuel it should be taken outside and renewed. Renewing fires inside of the building raise smoke and dust and should, therefore, be avoided. During the first day's drying, with the ventilators open, an even temperature of about 60° should be maintained. It should afterwards be raised gradually to 75 or, if necessary, as the fish becomes hard, to 80 degrees.

When the fish have been dried in this way continuously for two days, or 48 hours, they should be taken off the hooks, built into large piles and pressed for about ten or twelve days, after which they should be given another two day's drying over the fires.

Larger and more elaborate buildings with proportionately more fires and with frames containing two or more rows of fish on each side, which are lowered or hoisted into position by means of overhead pulleys may, of course, be used, but the heating idea is the same as in the smaller buildings.

Boneless Cod.

The fish should be split and washed as for drying, salted as if intended for drying in the ordinary way. After being in salt for the necessary length of time they should be given one good day's drying. The skin should then be removed and all the bones extracted. The two sides of the split fish should be entirely separated. Drying is thereafter continued until the fish are hard enough to suit the market for which they are being prepared. The dried sides are usually marketed in 30 lb. boxes.

Pickled Cod in Tight Barrels.

Cod semi-mildly cured and packed in tight barrels with pickle, are far more desirable to many people in this and northern countries than heavily salted and dried fish. Curers on parts of the coast where the curing of cod in some form is made necessary, by reason of remoteness from fresh fish markets might find it to their advantage, therefore, to be able to cure cod in this way for the home markets, especially.

The fish should be split and washed as for drying, but both the splitting and the washing should be more carefully performed.

Salting:—The split fish, with both sides completely covered with salt, should be laid in puncheons or vats as for drying; but instead of all the fish being laid

back down they should be laid face to face, that is, one tier back down and the next back up. Pickled fish should be white and clear when cured and so, in order to prevent the possibility of discolouration by the back of one fish pressing on the face of another before the process of curing has commenced, this precaution is necessary. When the fish begin to float in the pickle they should be kept submerged by weights of some sort. After two and a half, or not more than three days, the fish should be removed from the vats or puncheons and carefully washed; all ragged pieces of fish should, at the same time, be cut away.

Packing:—The washed fish should now be packed into barrels. Hardwood barrels, such as are used for mackerel curing, are the most to be desired for packing pickled cod in; but if these are not available good tight spruce barrels may be used. Before packing, the large sized fish should be separated from the medium sized ones, and each grade weighed into lots of 200 lbs., or whatever uniform weight is necessary to fill the barrels, and packed separately. Each fish should be laid as flatly as possible, back down and curved in conformity with the side of the barrel. The top tier should be placed back up. It is a safe rule to lightly sprinkle salt between each fish, in the course of packing.

When the barrels have been packed full, they should be headed up, made perfectly tight, and laid on their sides. Each barrel should then be filled up with freshly made strong pickle through a bung hole bored in the top of the bilge. The pickle should be perfectly clear, and free from dust and sediment of any kind, before being poured into the barrels of fish. For that reason, it should invariably be strained through a cloth prior to use. Fish cured in this way, provided the barrels are strong and tight, and kept always full of pickle, will keep good for several months, in a cool place.



Our Atlantic Fisheries Development

By CECIL BOYD

When any thinking person, having the prosperity and prestige of Canada and her great fishing industry at heart, takes a map and looks over the wonderful extent of the Canadian seacoast; observes how bountifully a favoring Nature has supplied that seacoast with splendid harbors, seaports, lake and bays, convenient for the use of those who go down to the sea in ships; and comes to fully realize the enormous value, and attractive proximity thereto, of the great feeding and schooling haunts of the finny multitudes, he is certain to be most powerfully and pleasingly impressed with the almost limitless possibilities of our Canadian fisheries resources. Then the strong and stirring statement, relative to this great natural resource,

yet awaiting comprehensive and concentrated development, that there is "In all the world no fisheries like these," is seen to be no idle boast, or senseless chatter, but a statement based on a good, solid foundation of demonstrable fact.

Then let him look back over the history of the Canadian fishing industry, from its early infancy to its present-day state, and, remembering that he holds its welfare close to his heart, I imagine that he must be just as powerfully, but in this case displeasingly, impressed with the proportionately snaillike progress, particularly on the Atlantic Coast, that he has achieved in the 400 years of Canada's history. He must be sadly disappointed at the shortsighted way in which

Canadians have allowed their heritage in the rich resources of the sea, placed by the bountiful hand of Nature at their very doors, to be exploited and utilized, for their own national enrichment, by our enterprising and energetic cousins to the South. While we may not have exactly fallen asleep on the job, yet, to say the least, we have but feebly bestirred ourselves in making the most of those immense natural storehouses of food stuffs and potential fish products, so convenient to our hand, and whose material benefits might have been ours to a far larger extent, to the enrichment of our maritime population, and the consequent increase of the Country's prosperity.

Striking evidence of how large a debt the prosperity of the New England fishing industry owes to the waters lying off the Canadian and Newfoundland coasts, is afforded by an examination of the figures given in a bulletin (recently quoted in the Canadian Fisherman), issued by the United States Bureau of Fisheries, covering the landings of fish vessels at the ports of Boston, Gloucester and Portland, during the month of October, 1919.

It is shown by this return that, of the 25,356,789 lbs. of fresh fish landed at those ports in that period, over one-fifth, or to be exact, 5,879,368 lbs. came from fishing grounds proximate to our coasts, such as Grand Banks, Quero, Browns, Western, La Have and Cape Shore. Of the 717,593 lbs. of salt fish landed same period, practically all, or 707,543 lbs., came from the same grounds. A proportion even much larger than this is found in corresponding figures for the month of June, 1919. There we are informed that, of the total landings of fresh fish amounting to 23,661,050 lbs., practically one-half, or 11,635,988 lbs., were taken on the banks above mentioned, the same being true of all but 7,000 lbs. of the total of 2,693,907 lbs. of salt fish landed. Surely those figures contain food for serious and far from flattering thought for any one interested in our Fisheries.

In this connection, some quotations from a New York news item, appearing in a Halifax paper a few days ago, may be of interest: "The steam trawler Pelican reached New York today from the Newfoundland fishing banks, breaking the world's record for a single catch, with a haul of 2,000,000 pounds for eight weeks Captain Dennis Hayes, commander of the trawler, said there were 69,000 square miles of fishing area off the Grand Banks, with enough fish to feed the whole world. . . . The East Coast Fisheries Company announced today the acquisition of a fleet of ten of the most modern steam trawlers from the French government. The vessels are all of steel, and are the last word in elegance on the fishing banks, including shower baths for the huskies at the nets. The newest addition to the fleet, which is steaming up the coast from Savannah, Georgia, for the banks, will make the company's steam squadron consist of 25 vessels, the largest aggregation in the country. They will be able to bring in from 2,500,000 to 4,000,000 pounds of fish a week: they will stop off at Boston, Rockland, Me., and New York, making their first call with cargo in about a week or ten days."

To those familiar with conditions along the coast of the Maritime Provinces, it is matter of common knowledge that the flourishing fishing business of Gloucester and Boston have been very largely built up from fish caught in the neighborhood of our Canadian and Newfoundland coasts. Not only that, but

the personnel of the great fishing fleets, for many years past, have been almost wholly made up, both skippers and crews, from the stalwart sea-faring sons of the Maritime Provinces (particularly Nova Scotia), and Newfoundland. Along the whole Nova Scotia shoreline, from the Bay of Fundy waters to those of Northumberland Strait, that must be an unique hamlet indeed that has not contributed during the last fifty years or so, its quota towards the swelling of this host of hustlers, forced by their native land's slowness in developing the invitingly rich sea-fields at her front door, to place their splendid energies and venturesome spirits at the service of a foreign, though friendly, country, more wide-awake to the advantages to be gained from the intelligent garnering of the crops of the sea, which call for no sowing or seeding.

A friend of, and authority on, the Nova Scotia fisheries, in a recent article commenting on the apparent lack of development in the Provincial industry since the abrogation of the reciprocal fishing privileges with the United States, says:

"It is strange to reflect on the fact that the other Provinces have all outstripped us, despite our several advantages at the start, or no further back than the thirty-year period under review. Deep-sea and seashore fisheries were in full swing, a pushful native population pursued the calling, and really wonderful improvements were about to be introduced. The number of fishermen has more than doubled; valuable kinds have been added to the list of food-fish, like albacores, swordfish and fresh lobster exports; motor power has superseded oar and sail nearly everywhere; railways and steamboat lines, though yet inadequate, have opened up new routes for the marketing of our varied and abundant fish-stuff; prices have well-nigh quadrupled, and yet as a whole, our Nova Scotia fishery does not perceptibly move."

Another writer on the subject of the "Maritime Fisheries" has this to say: "From the time when the pioneer fishermen of Canada began to reap the harvest of the sea, until the abrogation of the reciprocity treaty in 1866, there was a steady gain in the volume of the Maritime fisheries; since that time they have been merely kept going, as it were, with antiquated appliances for carrying on the work, and no modern plants for the curing of fish worth speaking of in connection with what should be in existence. The development of the fisheries of Canada owes its present condition to the steady increase in value of the fisheries of British Columbia and of the Great Lakes. The Maritime fisheries, the real treasure house of Canada, are allowed to languish, business enterprise not seeing what it really is the business of public policy to promote, i.e., the development of those fisheries which have the boundless unsurveyed acreage of the North Atlantic with its prolific grounds, or banks, adjacent to the coasts of the Maritime Provinces, ever at the disposal of the fishermen."

While the abrogation of reciprocal privileges, as noted by the writers above quoted, may have been one of the chief causes, perhaps the chief cause, of the comparative stagnation in development for so many years, yet we are inclined to think, that the blame for this state may be laid at the door of a number of causes. Outside to a large extent of the county of Lunenburg, it would appear that far too many of our public citizens with money to invest, never seem to favorably consider the possibilities of our prolific marine resources, as a profitable avenue for such in-

vestment, preferring even the phantom returns of Western real estate, or the fabulous and fake financial rewards of fox-farming.

There is no doubt that an extensive system of educating the public in regard to the value of our fishery resources, not forgetting to reach the youth through the public schools and other institutions of learning, would prove of incalculable benefit in offsetting this tendency. We think that Mr. J. A. Paulhus, an officer of the Canadian Fisheries Association, stated the case very well, when, speaking at a banquet last April, he is reported to have said:

"As an officer of the Canadian Fisheries Association I have the honor to represent an industry with an annual value of fifty-three million dollars, and which employs about 100,000 persons. These figures may seem impressive, but the fishery resources of Canada are of such magnitude—excelling all other nations in variety and abundance of species—that the figures quoted are by no means commensurate with the possibilities of the industry. If we had developed our fisheries as they should have been developed, their annual value should have totalled one hundred millions, and at least a quarter of a million persons should be employed in them today.

"We need, perhaps more than any other industry, education. Education of the Canadian public to the value of fish as food and as a source of inherited wealth to be developed. Education of the fishermen and producers to catch fish by the most modern and economical methods; to pack and cure fish in accordance with the best practice and better than our competitors. Education of the Government and public bodies to the importance of fisheries development in order that we might secure the things so necessary to that development in the way of better railroad transportation; better marketing facilities; improved fisheries administration; research and biological work; the utilization of fish waste, and the creation of foreign markets for our fishery products."

Touching the matter of inadequate transportation facilities, noted in some of the remarks we have quoted above, there is no doubt whatever, that this is a particularly vital question so far as certain parts of Nova Scotia are concerned. It is proving an extremely heavy handicap to approximately half of the Southern shoreline of the Nova Scotian mainland. There its stunting and stagnating effects are felt with particular force. One must look at a map of this district, showing the location of the fertile fishing banks off the coast of Guysboro and Halifax counties, to at all adequately realize the splendid strategic vantage-ground naturally belonging to this littoral. Nature, using a slang phrase, "is there with the goods," and with the proper amount of scientific persuasion and co-operation is ready and willing to work hand in glove with mere man to the greater enrichment of our national wealth. One prime necessity for this complete co-operation, however, and the reaping of its full benefits, is the providing of those railway facilities, so lavishly bestowed in the past on other younger and often less deserving sections of this broad Dominion. It is somewhat encouraging to note that this question of making good the neglect of decades is becoming just now a live one, and it is sincerely to be hoped, not only for the sake of the development of the immediate territory concerned, but in the best interests of the fisheries of the Maritime Provinces and the whole Dominion, that the public will not be con-

tent to cease agitating, or lie on their oars, until this burning question is satisfactorily solved.

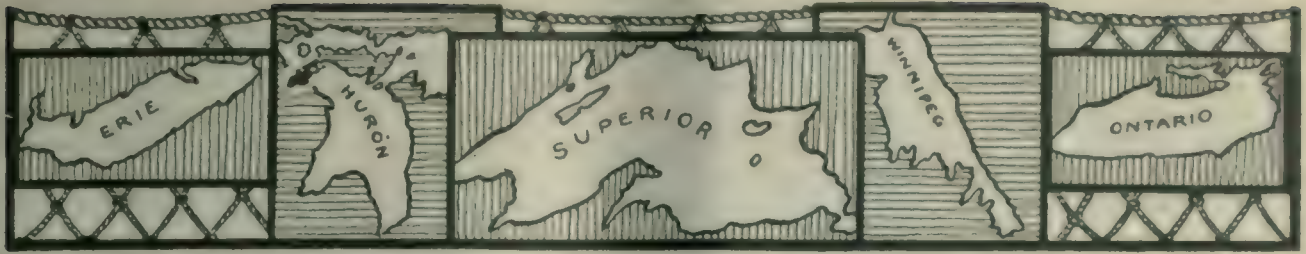
There is a great project on foot, in this Province at present, which, if carried through to a successful conclusion, (and judging by the enthusiasm attending its launching such seems most probable), might be made the means of materially boosting the fishing industry, among the other resources of the Maritime. The project referred to is that of the Old Home Summer and International Exposition for Nova Scotia, scheduled to take place in 1924. It is a scheme of vast proportions and limitless possibilities. Mr. H. C. Crowell, the originator and promoter of the undertaking, in a recent article in a Halifax paper, summarizes in a number of paragraphs, the chief ways in which the Exposition idea is related to the Old Home Summer scheme. Nos. 4 and 5 are worth quoting.

"4th—A medium for educating our people at home in the resources of their country and the opportunities for development. An opportunity to display all these resources to the visiting natives of the Province. A medium for advertising Nova Scotian resources to the countries of the world with whom we have the opportunities for developing trade.

"5th—The medium through which we can bring to Nova Scotia that summer the industrial leaders, financiers, educationalists, and journalists the world over, touring them through the Province, having every important centre prepare to show their resources and opportunities for industrial development."

Now it certainly should be seen to that the fisheries, as one of our Maritime main resources, is featured as strongly and favorably as possible at this contemplated big publicity drive. It should not be lost sight of, that this event will afford an unrivalled opportunity to display the wealth-producing wares of the sea as developed to date, as well as to point out, with the powerful wand of publicity, and attract attention to, the more dazzling prospect in the realm of possibilities logically ours by reason of our strategic position. Steps should be taken, when the program begins to assume more definite shape, to see that the fishing industry obtains a share of the beneficial publicity commensurate with its importance. When the varied enterprises and resources of the Atlantic Province are being shown, in their best dress and most becoming behavior, to visitors and possible investors, the advantages and attractions for fishery enterprise of such centres as Lunenburg, Canso, Digby, etc., should not be forgotten, (whether this advertising be carried out by means of tour or whatnot.) However, with the fishing communities of Nova Scotia represented on the Board of Directors by two such men as Chairman Wm Duff, of Lunenburg, and E. C. Whitman, of Canso, (who are undoubtedly familiar with this department of our industrial life), there ought not to be much danger, that our fisheries will fail to secure their legitimate share of the limelight, with whatever benefits may follow.

A miner explained one day to a bishop why he never went to church "You see, bish, it's like this," the miner said; "the first time I went to church they threw water on my face, and the second time I went they tied me to a woman I've had to keep ever since." The bishop smiled grimly. "And the third time you go," he said, "they'll throw dirt on you." — The Dominion.



Hut Fishing on Lake Erie

By JEFFERSON WILLIAMSON

Commercial fishermen along the southern shore of Lake Erie have begun their season of "hut fishing," recent cold waves having covered the lake with a glistening coat of steel-like ice. "Hut fishing" has been practised for several years by these hardy men of the States, especially in the vicinity of the Put-in Bay shoals and near Monroe Piers, below Detroit. It begins sometimes in December but more often early in January when the ice has attained a thickness of six to eighteen inches, and continues until the end of February or first week of March, dependent on the condition of the ice. Early thaws have been known to disperse the fishermen in mid-February.

mand such that in most cases the fishermen did not have to take the trouble to deliver their catches. Buyers visited them on the ice and carried away all they could get. During the 1918 season the fishermen made as high as \$200 a day and it was a slow day when one could not make from \$60 to \$75 a day.

The huts ordinarily are six feet long, four wide and seven high, built light to enhance portability. Two-by-two sticks are used for framework and the ideal covering is canvas, but burlap bags and tin sheeting sometimes are used. Each shanty has a ventilation chimney with a raised hood, for the small door must be kept closed during fishing hours and the peep-hole



Lake Erie Fishing Huts on the Ice.

Ordinarily the fishermen go only half a mile off-shore, but some venture out two and a half miles, to the steamer lanes, where pickerel abound. But pike, perch and sunfish afford satisfactory fishing where the risks are fewer.

The fishermen this year are looking forward to as successful a season as they had in 1918, which was their banner year. Mild weather last year cut down the duration of the fishing and militated against extraordinary catches. In 1918 the fishermen's catches of pike alone ranged around 200 a day for each man and five-pounders were common. Very few of the pike were less than two pounds in weight. The market has been steady and certain for several seasons. The fish are in big demand in the large hotels of Cleveland, Detroit, Philadelphia, New York and elsewhere. Prices have been eminently satisfactory and the de-

of a window must be heavily blinded to keep out light. Absolute darkness is essential. It makes it possible for the fisherman to see distinctly any moving object in the water. This is the principle of the glass-bottomed boats that take tourists out to see the wonders of the deep in the neighborhood of Catalina Island, Calif.

In this total darkness the fisherman sits on a little stool and peers into the hole he has cut in the ice of the shanty floor. The hole is about 15 inches wide and from 24 to 30 inches long, chipped away slantingly underneath so that the fisherman can see the approach of the fish before it reaches the hole proper.

Spears, and hook and line—short drop lines or hand lines—are used by the fishermen. Pike are speared and pickerel, yellow-ringed perch and sunfish take the line, with live or frozen minnows as the bait. Spear-

ing and hooking may be done simultaneously through the same hole. Perch and sunfish run in schools. One may catch a bushel of them in an hour or only a few a day, according to the luck. They weigh from one to four pounds. Invariably the fishermen's biggest catches are of these two fishes, despite the steady regularity with which he may be able to spear the voracious pike.

Pike spearing is, of course, more exciting. This is how it is done: The fisherman uses a wooden minnow, made by himself during his idle summer hours. Shop minnows are not good enough for him at all. After whittling the minnow, about six inches in length, the fisherman sandpapers it and tests it in a tub of water. He keeps on sandpapering until he has brought it to that state of perfection where it will cavort, at the end of a string, exactly according to his desires. He wants his minnow to be well-behaved and when it becomes so he paints it a dark shade or to resemble a fish. No two fishermen, by the way, seem to have the same ideas concerning these minnow decoys. What suits one would not do at all for another.

The fisherman keeps his minnow decoy jiggling in a circle two feet from the surface of the water, thus arousing the curiosity of the pike, which strikes at lightning speed and goes on by. In a few moments the pike comes back slowly for a more thorough investigation and is impaled by the five-tined spear poised for his coming. The fisherman aims amidships and not one in a thousand pike get away from the experts. A few fishermen, uncertain of themselves at first, have used a three-gang hook on the decoy, to bother the pike a moment and give the spear arm more opportunity, but fishermen soon become able to dispense with this aid to success.

Pike, perch and sunfish are caught near shore and pickerel are caught far out, in from 25 to 30 feet of water. Bass also are caught far out, where there is current, but these must be tossed back because it is illegal to catch them.

A fisherman seldom remains long in one "location." When the fish stop running he moves to a better place nearby. Once located, however, he beds the base of his hut with snow to keep out wind and to anchor it and also uses light ropes and pegs driven into the ice for anchoring purposes. Forty-mile zephyrs are common on the lakes. For warmth the fisherman uses a diminutive stove, usually an oil burner which keeps the hut at such temperature that the fisherman works in his shirt sleeves. The huts are hauled about by horse and cart or automobile truck.

A scoop net is one of the fisherman's requisites, to pick up scum ice, twigs and other debris that finds its way to the spear hole. He must also have a board to put over the hole so the pike won't flop back into the water. When the pike is detached from the tines and thrown just outside the door to freeze then it is time to take the cover off the hole.

The fishermen go out in groups. They have regular fishing villages on the ice, and at least one must carry a mariner's compass, for blizzards are sudden and frequent and even an experienced waterman half a mile off shore is taking big chances on getting back to land without a compass, during a blizzard.

The hut fisherman's complete outfit costs him in the neighborhood of \$40—a rather small investment and one that even the poorest of fishermen can get back on the first day of his labor if he has any sort of luck at all.

COMMISSION OF CONSERVATION, OTTAWA Tenth Annual Report

Students of Canada's resources and of the problems associated with their efficient development will find a serviceable addition to the literature on this subject in the tenth annual report of the Commission of Conservation.

A concise review of the year's work is furnished by Mr. James White, Assistant to Chairman. A series of unusually informative contributions includes "Housing, Town Planning and Municipal Government" by Mr. Thos. Adams; "Medicine in War" by Dr. C. A. Hodgetts; discussions of various phases of forest conservation by Mr. Clyde Leavitt, Dr. C. D. Howe and Mr. Roland D. Craig; and of agricultural investigations by Mr. F. C. Nunnick. Particularly timely studies of the water-power and fuel situations in Canada are presented by Messrs. Arthur V. White and Leo G. Denis.

This publication will not disappoint the very wide circle of readers to whom it affords an instructive annual résumé of problems and progress in respect to the intelligent use and study of our natural resources.

DEPARTMENT OF THE NAVAL SERVICE

Notes On Sea Fisheries Results for December

A very stormy period during December seriously interfered with boat fishing on the Atlantic coast, and resulted in somewhat reduced landings of cod, haddock, hake and pollock, compared with those for December in the preceding year.

The aggregate total of these fish for the month just closed, was 68,000 cwts, and for the same month a year ago 84,000 cwts.

The catch of smelts was greater, however, it amounted to 28,741 cwts.

Lobster fishing has been in progress in the counties of Charlotte and St. John, N. B., since the 15th of November, and the total quantity taken up to the end of December was 4,828 cwts., against 2,689 cwts., during the same period in the preceding year. The whole catch was consumed fresh.

Wet and windy weather prevailed on the Pacific coast, and yet the results of the month's operations were considerably greater than those of December, 1918.

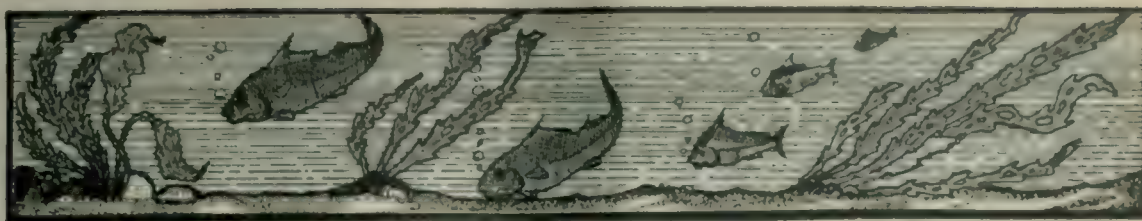
The salmon catch was about the same, but the herring catch amounted to 248,377 cwts., against 130,589 cwts; the pilchard catch to 34,148 cwts, against 7,224 cwts., and the halibut landing, by both Canadian and American vessels, to 14,044 cwts., against 4,450 cwts. The greater part of the herring catch was dry salted for the Orient, while the bulk of the pilchard catch was canned.

The total value of sea fish on both coasts, at the point of landing, amounted to \$1,282,203, against \$1,176,288 for the same month last year.

"I am sensible of the honor you do me, Mr. Mitchell, in the proposal of marriage you have just made," said the young lady, with a slight curl of the lip, "but circumstances over which I have no control compel me to decline the honor."

"What are those circumstances?" demanded the young man.

"Your circumstances, Mr. Mitchell.—The O. A. C. Review.



Salt Making in France

By DORIS HEMMING.

The tiny speck that blocks the canal two kilometres away gradually assumes a distinctive shape. Shading my eyes from the sun of the Midi that beats down as bright in winter as in summer, I can presently make out the graceful lines of a barge, one of those large generous-looking barges so extensively used in French commerce. A rope from the bow is attached to the harness of the plodding pair of earhorses which are urged on from time to time by a workman in blouse and sabots.

"If Madame will be good enough to pass, we are about to swing the bridge."

go to France with their cargoes of cod. Some three or four hundred thousand tons of salt are produced annually in France. A small proportion of this is mined in the Pyrenees, but the greater part is extracted from sea water on the coasts of the Bay of Biscay and the Mediterranean. The sea salt industry is thus divided into two distinct sections, that of the west coast and the south. About 120,000 tons are produced annually on the west coast by a thousand individual gatherers who work the low-lying lands in front of their homes independently just as a market gardener grows his veget-



A Salt Heap.

The barge has now arrived and with considerable manoeuvring of the rudder, is being turned into a subsidiary canal leading from the main waterway. The barge is filled with salt, coarse as a load of Canadian peas, but white as snow except for an occasional stray shell or pebble. From the marshes a few kilometres from the shore of the Mediterranean the salt has been brought to be ground at the inland factory convenient to the railway. The bridge now swings back and the boat slowly takes its place at the end of the line of barges waiting to be emptied by the usual cup and belt that feeds the storehouses.

One of the great French industries is the production of salt, an industry of particular interest to Canadians as large quantities of French salt is brought every year to Canada and Newfoundland in the fishing boats that

ables. On the south coast the favorable lands are entirely in the hands of a powerful organization which dates back two hundred years.

It is exceedingly interesting to contrast the methods employed on the two coasts. The individual gatherer works by rule of thumb, floods his garden with water one day and scrapes up his thin layer of salt the next, but not without raking in a goodly portion of his peck of dirt. All summer long he keeps raking away and storing his bags of sandy salt, content to follow the methods that were in vogue in the days of the Romans. The Parisian cooks, so they say, are content enough too with the existing order of things, and even the most expert chef will declare that there is a special virtue in the very greyness of his salt.

In the south, however, where the people work under

the direction of the company and not for themselves, very different methods are the rule. Every year brings new improvements to a system that has now reached even the standard of the American pure food laws.

When all is said and done, however, comparatively little salt finds its way to the family salt cellar. By far the bulk of the "crop" is used for industrial purposes, such as salting fish, curing pork, tanning hides and feeding sheep. As the French Government imposes a fine of 10 francs (\$2) per 100 kilos (45 pounds) on salt for human consumption, that destined for the tanneries or for cattle is rendered unfit for food before it leaves the factory. Into the troughs of snow-white salt is poured coal oil or tar, and the tannery order passes the customs officials free of duty. Oxide of iron or pure and simple rust is mixed with the salt, the reddish mixture is pressed into bricks, and behold a delicacy dear to the palate of the most aristocratic muton.

But before the salt is graded, packed and shipped for table or industrial purposes as the case may be, a long and exact process must be carried out by aid of the sun and the absence of rain. In the Midi happily the sun shines nearly every day in the year and it is not uncommon to go six months without rain. So the salt workers make their calculations regardless of wind and weather in a way that is impossible on the stormy western coast.

There are salt marshes at various points along the Mediterranean, at Nice, Marseilles, but chiefly near the tiny walled city of Aigues-Mortes. For miles outside the town the marshes are divided into shallow squares by low dykes, with canals running in all directions to serve as transportation arteries. Every here and there the level monotony of the landscape is broken by great pyramids of salt shining like snow in the sun. Fortunately there is practically no rain to dissolve the salt, and when a shower does fall annually in the autumn it runs off the solid mass without doing any harm. So confident is the company as to the safety of their salt by the canal side that they only take the trouble to cover their reserve stores, for unless salt is kept for five years the depreciation is so slight that the cost of building a loose tile roof on top of it is not a paying investment.

To the uninitiated observer the countless reservoirs are as meaningless as the waterways of a Chinese city. Reduce to a small scale on a map with guiding arrows, however, the puzzle is readily solved and the plan becomes distinct at once. An artificial scale of tests is invented, based on the fact that the specific gravity of sea water is heavier than fresh. Taking the weight of fresh water as zero, sea water is heavier by the weight of the salt that it contains and the water of the Mediterranean in its natural state is accordingly 3 degrees. As it evaporates the salt content becomes greater and the specific gravity heavier, until it finally reaches the point of saturation when the salt is deposited.

The sea water is first led into a canal, pumped into a reservoir and allowed to flow in and out from one basin to another down an almost imperceptible gradient. During all this time the water has been evaporating in the sun, until at the end of the first stage it measures 6 degrees. Another pump brings it to a new series of canals and basins. When it reaches the central lagoon where the reserve supply is kept it is 17

degrees. By this time it has journeyed many months and covered several hundred miles in its steady flow.

From this point the work becomes very exact. The final basins, less than one foot deep, are rolled smooth and hard as billiard tables. After travelling throughout the year, the water has reached the innermost mysteries of the maze by the month of August. It is now at 26 degrees, the point of saturation. The salt readily forms in large crystals, and the water is drawn off leaving a hard white surface like windswept but rather dirty-colored snow, about 3 ins. in depth. The mother liquor which contains valuable bromine and iodine salts is allowed to go to waste, as the French consider that it is not commercially practical to try to preserve these by-products, which form the basis of another entirely distinct industry.

Light railway tracks are laid on the salt beds and a small army of men shovel the salt into cars, which are speedily shunted off to the washing plant. The testing of the waters goes on the year round, but the whole harvest of 200,000 tons is gathered in the months of August and September. In order that the year's work shall not be lost by dissolving the salt, the water used for washing is almost a saturate solution. After a vigorous churning to rub the sand off the crystals, the salt emerges from its bath clear and bright, and is carried away on a canvas belt to be dumped on the top of the main heap. At the end of the season the great pile contains hundreds of tons of salts and stands from 50 to 60 feet high like a mound of snow visible for miles around.

Then comes the work of transporting the salt to the factory where it is ground into various sizes in mills similar to those used for flour, coffee, etc. Four main sizes are in general use. No. 4 is the salt in its natural state and is used for brine. Nos. 2 and 3 are used for commercial purposes and No. 1 for table use.

From the factory the salt is sent to every district of France and through the port of Marseilles to other countries and other people of which the French know little, to assist in their industries and season their soup.

Salt is one of the little necessities of life that is taken for granted until for some reason a shortage is threatened. During the war sugar might be lacking and bread might be black, but the salt supply was considered necessary to the life of the nation. Accordingly during the critical shortage of labor, production was continued normally by employing German prisoners and women. The Boches have now happily returned to their own country, and the French soldiers, still wearing their army caps or their great coats without buttons, have settled down again to their peaceful task of testing the waters in the marshes and raking in the salt.

Five-year-old Jimmie was telling about some medicine he had taken when recovering from the flu.

"Yes," he said, "I took some compulsion of cod-liver oil and—"

"You mean emulsion, don't you—not compulsion?" said the visitor.

"Well," rejoined Jimmie, "there was a good deal of compulsion about it."—*Journal of Commerce.*



The Sea Mussel, Its Food Value and Life History

By PROF. E. E. PRINCE, M.A., LL. D., D. Sc, Dominion Commissioner of Fisheries, Ottawa.

Many years ago, when I was connected with a Parliamentary Fishery Committee in London, England, I spent some time on a Dutch lugger in the North Sea, and the worthy skipper—Sebastien Terelinck, by name—gave me a delicious dish on board which he said consisted of sea-mussels chopped up with parsley, and other vegetables, seasoned and stewed. It was one of the most savoury dishes of which I ever partook. He told me that in Holland, over a dozen delicious dishes were prepared by Dutch housewives from mussels. I have never tasted an appetizing mussel stew since.

Mussel v. Oyster as Food.

How is it that our people, who justifiably boast that Canada is unexcelled for the variety and excellence of its foods, have neglected such an excellent sea-food as mussels? They are cheap and plentiful, and they abound along great extent of our shores. Oysters and lobsters are becoming scarce and dear, but mussels are plentiful and cheap. The best hotel chefs are well aware of the delicious flavour of the mussel, and have long used it in preparing dainty sauces and flavourings, when lobsters and oysters were not obtainable, or too expensive. The mussel is a food, it seems incredible to assert, is even superior to the oyster as the following comparison demonstrates:—

	Flesh.	Liquids.	Refuse.	Proteins.	Fats.
Oysters	9.81	7.65	81.40	6.00	1.2
Mussels	32.66	18.00	46.69	10.18	1.64

Biological Board's Investigations.

The Biological Board of Canada for some years has included in its annual programme of investigations, the study of the mussel, and Miss Mossop of Toronto, (but now of Western University, London, Ontario,) has completed several reports on our mussel resources, and the growth of the mussel in the Bay of Fundy and adjacent waters. Several able United States Scientists have also contributed to the solution of mussel problems. For the mussel question, like so many other fishery questions, offers problems which are by no means easy to solve.

Little Known of Mussel's Life-History.

The initial difficulty presented, has been lack of knowledge respecting the life-history and growth of the mussel. That great authority, Sir E. Ray Lankester, in the 9th Edition of the Encyclopedia Britannica, confessed that little was known about the early life of the mussel, whereas the oyster, clam, scallop, and other shellfish, had been thoroughly studied. This is remarkable, considering the widespread occurrence of the mussel. When Lord Tweedmouth's Scottish Mussel and Bait Beds Commission was busy many years ago, I found, as Secretary of that Commission, that blank ignorance prevailed respecting the life of the mussel, though Dr. John Wilson, of St. Andrew's University had shortly before carried out a most thor-

oughly study of such, and the Scottish Fishery Board had published his remarkable memoir, with beautiful plates, in the 5th Annual Report of that Board (pp. 246-256).

Discoveries by Dr. Wilson and Others.

Dr. Wilson's results have been confirmed by Doctor Field, and other biologists, who have studied the American mussel. Briefly stated, the chief points in this life history are as follows:—

(1). **Breeding Period.** The spawning period differs on various parts of the coast. Hence, Professor Ganong found April and May to be the period in Canada. Dr. Irving Field thinks that the middle of June to the end of August applies to the New England shores, though at Wood's Hole they have not been found to ripen before July 3rd. British authorities specify April to the end of June, or a little later; while in France, February and March are stated to be the chief months.

(2). **Separate Sexes.** The sexes are separate, but cannot be distinguished excepting at the breeding time, when the male is whitish of creamy pink, while the female is deep orange or even brick red, and presents a more granular appearance than the male. Female mussels often preponderate over males.

(3). **Genital Glands.** The egg—and sperm—producing organs have not the form of definite genital glands, but form a widespread system of minute tubes all over the liver, the mantle lobes which line the shell-valves, along the floor of the chamber in which the tubular heart lies, and along the walls of the lateral cavities, and the hind portions of the ligaments, which protrude like flaps and given a swollen appearance to the wedge-shaped abdomen.

Owing to the wide-spread character of the ovaries and sperm producing organs, the whole mussel at spawning time appears very fleshy and swollen, and the mantle lobes especially are thickened and opaque, whereas after spawning they are thin and watery. In October they improve again.

(4). **Mussel's egg described.** The eggs, which are just visible to the eye as opaque whitish grains, are spherical and 1/350th of an inch in diameter, and on being thrown out by the female sink to the bottom, while the milky sperm fluid, discharged by the male floats as a cloudy substance, often visible for 8 or 10 feet, slightly discolouring the water. Ten to fifteen minutes suffice to deposit the eggs, and during that time they are fertilized as they sink.

(5). **Fertilization and Embryo.** On fertilization, being completed the eggs swell slightly, though it would take not fewer than 300 to cover the top of a pinhead. They are really larger than the egg of the oyster, which measures less than 1/500th of an inch in diameter. The egg-mass separates into a mass of small divisions or segments, and soon looks like a

microscopic raspberry, white, translucent, and becoming covered in eight to twelve hours with moving hairs or cilia, which cause it to spin around.

(6). **Swimming Mussel Larva.** The embryo bursts through the thin membrane or shell, and appears oval in outline, white a cap-like organ, the "velum," is formed at one end surrounded by a circle of bristles, in the midst of which projects one long bristle, or "flagellum," by which it can direct its course. It swims actively about during the first twenty-four hours. Indeed, the swimming stage lasts for several days, during which a transparent shell is formed, but not large enough to entirely protect the little mussel.

(7). **Stage of Attachment.** An reaching a size of 1/20th to 1/70th of an inch in diameter, the young mussel, called a "veliger," has grown a shell which completely encloses it like a twin-valved corselet, and it possesses two eyes, so that it can distinguish light from dark, but oddly enough, these optical organs are placed on the front of the throat, which is a queer place for organs of vision. It also has a small otocyst or ear, and the foot, which is short and usually called the tongue, is white wormlike organ very actively used for progression after it descends to the bottom. Young mussels about the size of millet seeds, cling to the weeds, zoophytes and other objects, and by the time they are 1/12th of an inch in length they produce a "byssus," or bunch of threads for anchoring themselves.

Young mussels will attach themselves to any object, and a most remarkable case is that of a large mussel choking up the gill chamber of a haddock, which is exhibited in the University Museum at St. Andrews, Scotland. This enormous mussel had settled therein as a veliger and flourished in its unique situation. Floating buoys may rapidly become clothed with mussels, half a ton being scraped from one buoy in of Lincolnshire, Wash after a few weeks.

It has been erroneously stated that the mussel when once anchored, cannot detach itself, but this is not the case. Mussels can move about and form a new byssus, or anchor, at will. Dr. Wilson indeed, points out that the Scottish fishermen fill basins with shelled mussels, when getting their bait ready, and they soon attach themselves to the sides and thickly cloth the basin with anchoring threads in a few hours.

(8). **Rate of Growth.** The growth of the mussel is such that a length of two or three inches is reached in a year, but much depends on their location. Where food is abundant and the surrounding water flows rapidly, they grow and fatten with surprising rapidity.

Habits of the Mussel.

Mussels abound from tide-mark down to five or six fathoms depth, though they occur as deep as fifty fathoms. The horse-mussel, (*Modiolus*) is a different species, and much larger than the shore mussel, and it is a deep water type. Mussels thrive best in brackish water, especially near mouths of rivers, where they cover muddy flats, and feed on minute plants, diatoms, and invisible food-particles, floating in the water. The food is drawn into the mouth by currents caused by constant waving of the cilia or hairs, the middle cavity of the body, where also the gills hang down like curtains. Mussels are very sociable, and usually group themselves in bunches, so much so that, when fishermen scatter them out, they re-assemble and cling together, in a few days, by forming the anchoring fibres

or byssus threads. On some coasts, as off the Norfolk coast, on Lynn Deep, England, the mussel-beds cover nearly one hundred square miles. The Great Ours River drains there into the sea and carries a large amount of food material, which is important to the prosperity of the mussel beds. Mussel-beds occur all the way on the East coast of Britain to the extreme north of Scotland, and on the west coast they occur very generally. Miss Mossop finds that the Canadian mussel has a wide distribution on our Atlantic coasts, but the areas of the beds are somewhat limited. They occur from Grand Manan to Western Nova Scotia, and up to Digby Basin, and on the opposite Shore occur at intervals round to the mouth of the St. Croix. As a modern writer has said, "Like the social reformer of the hour, the mussel cultivator must set his face above all things, against overcrowding. 'Tis the mussels besetting sin, and the stunted things you find crawling and clustering over tidal rocks and boulders shows how baneful is its effect." Stunted away mussels not more than 1/8th of an inch long may be come sexually mature as Dr. Wilson found.

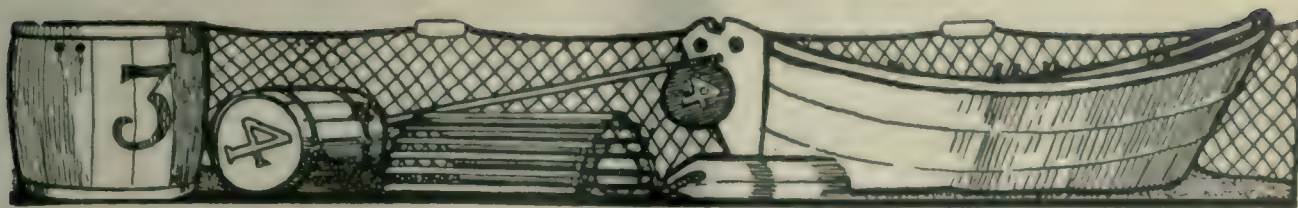
Mussel Culture Systems.

Two systems of mussel culture have been adopted, viz.—the "Bed" system, which is popular in Holland, and mainly consists in exploiting natural beds in rotation, collecting small seed mussels and scattering them over sparsely filled areas. In France, the "Bouchot" or Palisade method has been adopted. Rows of sticks, 300 or 400 in a row, are placed on flat fore-shore areas, and these sticks are woven with brush, on which half-grown mussels are arranged by hand and secured by netting when the tide is out. The mussels anchor themselves and thrive wonderfully, but such large rapidly grown "buttery" mussels are highly esteemed for food purposes, but are not suitable for bait, because the fishermen prefer a compact tough mussel which holds well on the hook "Bouchot" mussels are also more expensive.

Great Value of Mussel as Bait.

Canadian fishermen have never appreciated the value of the mussel as bait, and Dr. Huntsman, in Fishery Leaflet No. 3 (The Bait Question), issued recently by the Biological Board of Canada, states that our fishermen should use mussel bait, which is prepared in the same way as the clam, by separating the two half-shells and taking out the animal. With little practice, this can be done very rapidly. He gives the results of a valuable experiment carried out near Eastern Harbour, Cape Breton in 1917, which proves that cod, haddock, and hake, take mussel bait, while dogfish refuse it. This was noticed when schools of dogfish were hovering around the baited lines. The same expert used gaspereaux or alewives in Miramichi bay the following year, and he reports—"When used together on the same lines, more cod, haddock, and hake were caught with the mussels than with the gaspereaux. More striking however, was the fact that such large numbers of dogfish and skate were caught with gaspereaux bait, but not a single one with mussel bait."

Our fishermen, it seems, would avoid the risk of hooking dogfish if they used shellfish as bait, rather than herring or other fish, and the mussel is well worthy of attention, and of utilization as bait. Certainly as a food, the mussel is also merits more attention, and would doubtless become a popular food if made available for the public.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada

HOW MANY WHOLESALE GROCERS ASKED THEIR CUSTOMERS TO TRY AND SELL A CASE OF CANNED FISH

(F. E. Payson, Secretary, Vancouver Branch Canadian Fisheries Association.)

It's human nature the world over to watch for a good buy. Show the buying public how much they save by **BUYING A CASE OF CANNED FISH**. First the actual cash saving by buying in quantity, then the economy of a can of fish, in which there is no waste. They **BUY NET WEIGHT** in each can.

The public are just as anxious to save to-day as they ever were. This talk one hears of the public buying luxuries and being willing to pay any price for the fancy shoes and clothes, hats, etc. applies to very few, and if they were not manufactured and placed on sale many would never know about them. Did it ever occur to you to wonder how many old suits and overcoats were re-made and dyed during this Winter? Make some enquiries among your acquaintances. It will surprise you.

The buying public that great middle class and the labouring class—are looking to save all they can, and if you give them the chance they will take advantage of it every time.

If the retailer will advertise that **CANNED FISH** may be **PURCHASED BY THE CASE** he will soon find he can move a greater volume of goods in this particular line than he ever has before.

Mr. Wholesaler, ask your customer, the retail man to try **ADVERTISING CANNED FISH BY THE CASE**. He will be surprised at the results.

JUMP IN EXPRESS RATES CAUSES FALLING OFF IN FLAT FISH SALES ON THE PRAIRIES

The public does not seem inclined to pay advance prices on flat fish, as a result the shipments from the Pacific Coast have gradually dropped since the Government subsidy was reduced and the express rates advanced.

This means that much of the good accomplished by the Government's Dominion wide advertising of flat fish as an economical food has been lost by the

abolishing of the subsidy and the allowing of the express Companies to increase the rate on shipments of fish.

This is not as it should be. Some method should be devised to insure reasonable rates on fish from the Pacific and Atlantic ports. Until this is done and the flat fish given a reasonable length of time to become a favored food, the government should lend a hand. This might be done by reverting to cheaper express rates, as the rates now charged are much higher than they should be. If British Columbia is to develop its fish business we must not be handicapped by high transportation rates.

HALIBUT FISHERMEN HAVE NEW RATE

By a new agreement between the large halibut producing companies on the Pacific Coast and the fishermen in their employ a slight increase in the price to be paid to the fishermen has gone into effect. A larger increase would undoubtedly have been paid if it had been possible to pay it and continue operating the large steamers. Not being able to do this and the fishermen realizing the position of the companies, a price was finally agreed upon satisfactory to all.

Both of the large companies in British Columbia have started operations with a portion of their fleets but will not operate the entire fleet for the present. The large Seattle firms are not operating any of their fleets so far. During the past year owing to the strike and sympathetic strikes and other causes the large steamers only operated about six months of actual working time.

This coming season the fishermen should fare much better and get in more time than during 1919.

The prices arranged for other varieties of fish remain the same as last year's schedule.

B. C. SALMON PACK SOLD

Vancouver, B. C., January 2.—Practically all of the British Columbia salmon pack for the 1919 season, consisting of 1,314,345 cases, and valued at more than \$15,000,000 has been sold. Seventy-five per cent, has been exported, principally to Great Britain. Cased salmon is smaller and varying quantities have been shipped from this province to other points in the British Empire and to France, Italy, Greece and several European countries.

RE MODIFICATIONS IN POLICY GOVERNING SALMON FISHING AND CANNING IN- DUSTRIES IN BRITISH COLUMBIA

Ottawa, January 20.—The question of the best policy to govern the administration of the great salmon fishing and canning industries of British Columbia has for years been one on which there has been much division of opinion. Owing to their nature the salmon fisheries are difficult to adequately protect as the fish are caught only when they are on their way to their spawning areas in the upper waters of the rivers and streams to reproduce their species. For several years past the policy has been to limit the number of persons that might engage in the fishery and hence the number of canneries has also been limited.

This policy made it impossible for persons not already engaged in these industries to go into them. Also tended to encourage the employment of Japanese in the industry and to discourage the settlement of a white fishing population on the coast.

Many of the soldiers who have returned from the front within the past few years have been anxious to engage in this industry but notwithstanding that several exceptions were made in their favour, the industry is not as freely open to them as it should be.

In the existing conditions two points seem obvious, viz:

1. That the protection of the fisheries by limiting the number of persons that may engage in fishing and in canning is no longer desirable; and
2. That it is desirable to do everything feasible to encourage a white fishing population to become permanently established along the coast of British Columbia to engage in the development of the great fisheries thereof.

After consideration of the whole matter by the Minister of the Naval Service he has decided to immediately withdraw limitation on the number of salmon cannery and salmon fishery licenses that may be issued; and, with the object of encouraging the establishing of a white fishing population on the coast, no salmon cannery nor salmon seining or trap-net fishing licenses will be granted to others than resident citizens of the white race or to joint stock companies composed entirely of persons of the white race and no greater number of salmon gill-net or trolling licenses, —the other methods of salmon fishing—will in future be granted to resident citizens of other than the white race or Native Indians than was issued to them for the past season.

Adequate protection of the fisheries will be assumed by the enforcement of proper regulations.

THE LITTLE BROWN MAN HAS STILL A GOOD CHANCE TO FISH UNDER NEW FISHING REGULATIONS IN BRITISH COLUMBIA

If a white British subject gets a purse seine license to operate a purse seine, there is apparently no law to prevent his employing Japanese or any other nationalities to work for him. All he needs is the boat and seine, and all the little Jap requires is to know how to fish.

Many more purse seine licenses will be issued this year than last and more Japanese will have a chance to fish than ever: If he has a purse seine and boat the white man can buy or lease the boat and employ the Japanese owner to fish for him.

The new regulations have helped rather than hindered the Japanese fisherman, except as regards the gill net licenses.

The canneries are not restricted to any given area but may send their seines and fishermen to any area. The new regulations have certainly thrown the salmon fishing wide open and now the excitement has cleared it looks as though things might have been a lot worse.

NO NEW APPLICATIONS FOR CANNERIES FOR BRITISH COLUMBIA TO DATE

There has been no rush for licenses to operate new salmon canneries in British Columbia although the salmon fisheries are now open to all British subjects of the white race. This does not surprise those who know the conditions. It takes much money and a considerable knowledge of the coast of British Columbia to start a new cannery with the hope of canning salmon with any degree of success, and to date there has been only one new salmon cannery license issued. This is for the Maritime Fisheries, Limited, for a cannery at Haysport, on the Skeena River.

This is not a new application as it has been on file for some time and a cold storage plant is already owned by this company at this point.

It will be another year before any real results as to how many new canneries will be built under the new regulations will be known.

CHANGE IN B. C. HATCHERY OFFICIALS

Captain J. N. Hamer is now in charge of the Gerard Hatchery, having been transferred from the Rivers Inlet Hatchery and succeeding Mr. L. Ogilvie, who was drowned last Summer. Capt. Hamer has been with the Dominion Fisheries Department for eight years having been head officer at Rivers Inlet since 1912. He was an Imperial Army officer and at one time served in the New Zealand forces. His successors at Rivers Inlet hatchery is Mr. W. Reid. This is a promotion as Mr. Reid was formerly Capt. Hamer's assistant.

CLOSE SEASON FOR HALIBUT FISHING BANKS QUITE NECESSARY

Chief Inspector F. H. Cunningham of the Dominion Fisheries for British Columbia considers that the proposed halibut treaty pending between Canada and the United States, absolutely necessary for the preservation of halibut.

The treaty provides a close season for halibut fishing from November to February 15, commencing next year. It embodies the findings of the International Fisheries Commission which received evidence here with regard to the North Pacific fishing in the spring of last year. Sir Douglas Hazen represented the Canadian government and W. C. Redfield, American Secretary of Commerce, was the appointee of the United States fishing interests.

"It is the season of the year when most of the small boats are laid up," explained the chief inspector, "While some of the larger boats start halibut fishing in January, the smaller vessels do not commence until February."

Mr. Cunningham does not think that a close season will make much difference to the halibut market as practically all halibut consumed during the winter months is the fall pack which has been kept in cold storage.

BARCLAY SOUND HERRING HEAVILY DEPLETED BY THE PAST SEASONS CATCH

The majority of the salt herring packed for the Chinese market this season has been packed up at Barclay Sound on the West Coast of Vancouver Island. At the present time there has been more packed than at any time during the last three or four years. In the past three years practically all of this variety of salt herring was packed from fish caught off Nanaimo on the East Coast of Vancouver Island and in most instances were packed and shipped by Japanese. This season many white fishermen fished and packed a large majority of the catch.

The result of the enormous catches which comprised every size of herring on the Nanaimo grounds has been that at the present time the Nanaimo herring are of an inferior quality when compared with Barclay Sound Herring. This condition is attributed to the heavy fishing and want of restrictions in past years in connection with the herring fisheries at Nanaimo. The question now arises will the condition of Barclay Sound fisheries as regards to herring catch be the same in future years as now obtains at Nanaimo? This condition should be studied carefully by the fisheries department so that the large sized herring may not be fished out.

HEAVY PACK OF SALT HERRING FOR CHINESE MARKET

The most of the salt herring pack for the Chinese market was produced on the West Coast of Vancouver Island at Barclay Sound. There will be some salted at Nanaimo as in past years but most of the pack will come from Barclay Sound.

An estimate of about 12,000 tons for the season has been made which is several thousand tons more than for each year the past two or three years. Prices have ranged from \$40.00 to \$50.00 per ton. These prices are f. o. b. Vancouver.

Shipping facilities have been better as the U. S. shipping Board arranged to handle a considerable quantity. Another fact is that white firms have secured a big share of the business, where in previous years of Japanese firms were the principal producers.

CANNED FISH MARKET

This season of the year sees a very small movement in any variety of salmon. With the exception of chums all varieties have been disposed of. Chums are being sold in small lots right along but no strong movement is noticed. Cannermen are busy getting plants ready for next season's operations.

Every indication points to an advance in prices of all varieties of canned salmon for the 1920 pack. This is owing to increased cost of cans, labor and the advance in price of fish to fishermen. The canned salmon prices have advanced very little in comparison with advances in other varieties of food.

NEW MARKETS

Many new connections have been made in foreign markets and the canning season will see increased sales to these markets. The sales to British Dominions such as Australia, New Zealand and South Africa is steadily increasing, and with increased transportation facilities there is certain to be a greater demand and stronger endeavors to broaden out in these markets. Not only will canned salmon be in demand but also herring and pilchards.

VANCOUVER WHOLESALE FISH MARKET

The first shipment of red Spring salmon arrived from the West Coast of Vancouver Island during the week ending January 17th. This shipment consisted of about five tons of fish, and was sold locally at prices ranging from 17c to 22c per lb.

Fresh caught ling cod are scarce, and are selling locally at from 10c to 12c per lb. There is a fair supply of fresh caught soles and a good demand locally at 7 to 8c per lb. Fresh herring are plentiful and are selling at 3c. There is no change in prices for shipping from the December quotations.

VANCOUVER WHOLESALE FISH MARKET

	Cents per lb.
Halibut, chicken ..	13
Red Springs (heads off) ..	18
White Springs (heads off).....	10
Cohoos ..	16
Ling Cod (plentiful)	8
Grey Cod (scarce)	5
Red Cod (round)	5 to 6
Smelt (scarce)	10 to 12
Soles and Brills	6 to 7
Herring ..	3 to 5
Skate	4
Perch ..	6

SHELL FISH

	per doz.
Crabs (scarce)	\$1.00 to \$1.50
Shrimps ..	22 to 25c
Clams ..	2½ to 3½c.

VANCOUVER PRICES SMOKED AND SALT FISH

Smoked Sable Fish (black cod, whole)....	14
Kipperd Sable Fish	20
Fillets, Sable Fish	17
Smoked Pink Salmon (whole)	20
Kipperd Salmon	18 to 20
Bloaters ..	7½
Kipperd Herring	9
Eastern Haddie	14
Western Haddie	10
Herring Chicks in bundles of 5 boxes (per box)	18c.
Salt Herring:	
Medium, 900 to 1000 count, 250 lbs. net....	\$8.50
Medium 1400 to 1500 count, 250 lbs. net	7.50
Large 200 lbs.	8.50
Large 100 lbs.	5.25
Large 50 lbs.	3.25
Salt Sable Fish (Black Cod):	
200 lbs.	22.00
100 lbs.	12.00
50 lbs. (Kit).....	6.25
Salt Pink Salmon:	
200 lbs. ...	15.50
100 lbs.	8.50
50 lbs.	4.75
Salt Grey Cod:	
50 to 200 lbs., ped lb.	10c

RECENT LEGAL DIVISION IN N.S. COURTS re PURSE SEINING.

(From Michigan Law Review).

Fishing.—Violation of Statute against Purse Seining.—In a prosecution for violation of a statute prohibiting fishing for salmon with a purse seine east of a certain line in the Columbia river, the facts were stipulated to be as follows: defendant was fishing with a purse seine outside forbidden portion of the river when the tide carried his net towards such line; before reaching same he closed his net completely, and allowed it to drift into the forbidden area with the fish in it; when about 100 yards inside said line he pulled on to his boat and removed the fish. Parties further stipulated that, in such fishing, the act of the removing the net from the water and emptying same is a necessary part of the fishing operation; also that no fish were caught in the seine inside said line. **Held:** since such act was a necessary part of the fishing operation, defendant was guilty of a violation of the statute. *State v. Marco*, (Ore. 1919), 183 Pac. 653.

The court quotes extensively from, and largely bases its decision on, the case of "*The Gerring*" v. Queen, 27 Canada Sup. Rep. 271. In that case, by treaty, the United States had renounced the right to "take, dry, or cure fish" within three miles of the coast of British possessions in America. The "*Gerring*" a U. S. fishing vessel, had been fishing outside the three-mile limit, had pulled in its seine, and "pursed" same, attaching it to the boat, and the engaged, the vessel drifted within the three-mile limit and was seized. By a 3-2 vote the Canadian court condemned the vessel as having been fishing in violation of the treaty and Canadian law. While the majority of the court in that case did decide that such acts were "fishing" and a violation of the treaty, the decision of condemnation appears to have been influenced by certain other circumstances. The words of the treaty—"take, dry or cure fish"—were interpreted as intended to embrace all the intermediate acts (as the bailing here) between the taking itself and the preparing of human consumption; also the treaty provided that foreign fishing vessels might enter into the territorial waters for wood, water, shelter or repairs, and for no other purpose; so, on this ground, even the entry itself may have been sufficient to decide the question; further, the court seemed to have been influenced by the fact that this kind of fishing was considered contrary to public policy, as tending to annihilate the fish-food supply, and hesitated to give immunity to the vessel under these circumstances. On the above-mentioned grounds it seems that this case may be distinguished from the case at hand. Probably the Oregon court based its decision on the stipulation of the parties that the act of removing the seine from the water was a necessary part of the fishing operation—otherwise it is difficult to see on what grounds the case should be sustained; and it may be noted that this court, also, was influenced by the fact that this kind of fishing is looked upon with disfavor. These courts lay some stress upon the fact that, until the fish are actually in the boat, there is still a chance of escape and that therefore the operation of fishing is not complete; granting this, certainly in these two cases no more fish could enter the net, and that would seem to be the true prohibition of such a statute against fishing. The fish are undoubtedly reduced to possession and ownership when completely enclosed in the net—*State v. Shaw*, 67 Ohio St. 157, 60 L.R.A. 481,—and it would seem that, for ordinary purposes, the

act of fishing should then be considered as complete, and certainly so as against a statute such as the one here, the purpose of which would seem merely to be to prevent the catching of fish out of the waters in question.

THE FISHERIES OF GLOUCESTER

The total catch of fish landed at Gloucester, Mass., according to a Board of Trade return, amounted to 120,350,914 lbs. for the year 1919—a decrease of practically 24,000,000 lbs. in comparison with the total landings of 1918.

There was a considerable falling off in the landings of pollock to the amount of approximately 8,000,000 lbs. but this was made up by an increase in the haddock catch of a similar amount. The landings of fresh cod were the same as during 1918, but there were decreases in the catch of halibut and the landings of salt cod, fresh herring, salt herring, cured fish, and fresh and salt mackerel. Imports from Canada and Newfoundland totalled 25,243,868 lbs., during the year, a decrease of approximately 3,000,000 lbs. from 1918.

NEW KERMATH MODEL 40 H. P. MOTOR

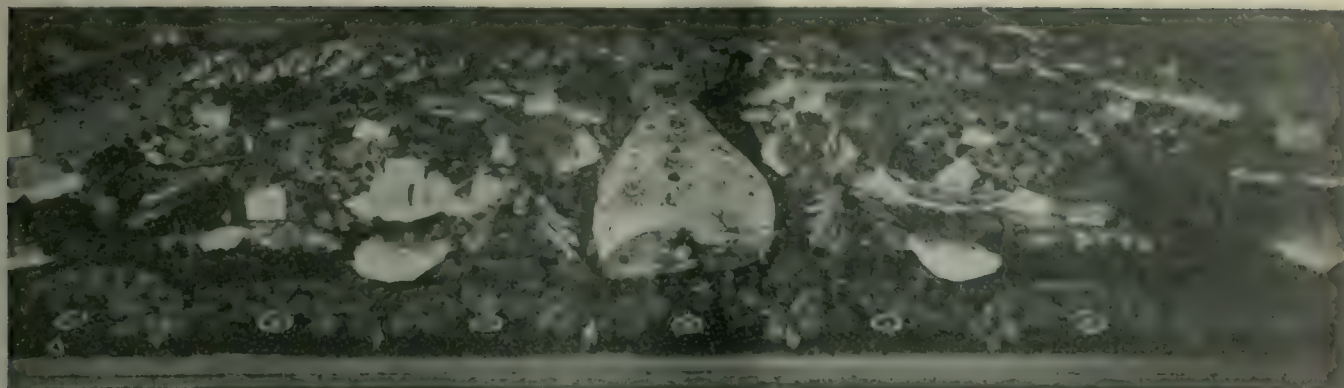
The Kermath Manufacturing Company, Detroit, announce that they are ready to supply orders for their new model 40 H. P.—a 4 cylinder, 4 cycle engine, extremely suitable for fishing craft. Model 40 is absolutely complete in every detail and has only just been put on the market after a year and a half of severe testing. Some of the noteworthy features of the engine are a deep section crank-case giving extreme rigidity to the crank case and bearings and positive assurance of perfect alignment of this part of the motor at all times under most extreme conditions, and ability to operate with facility at speeds from as low as 500 r. p. m. to 1,200 r. p. m. The bearings throughout are extremely large and the reversing gear is fitted to the plant. The price includes all accessories of the best makes and has been based upon a large production of the Model 40 Motor. The company have received many flattering testimonials already from experts who have made boat trials with the new motor.

CANADIAN LOBSTERS WANTED FOR FRANCE

The Canadian Trade Commission advise us that they have received a cable from the Canadian Mission in London reading as follows: "Henry W. Peabody, 16 Eastcheap, London, E. C., England, advise having important enquiry for lobsters for France. Please have New Brunswick and Western Nova Scotia packers interested communicate direct with these people."

AMENDMENT TO CANNED FOODS ACT

By an amendment to the Meat and Canned Foods Act assented to on November 10th, the minimum weight of the contents, description and vernacular name of contents, and place where packed must be printed on the label of the can. There shall be five sizes of cans used for canning lobsters, viz: cans containing not less than 3, 6, 9, 12, 16 ounces avoirdupois of dry lobster meat. No other size can allowed without permission of the Minister.



Montreal Fish Facts and Fancies

By "The Dreamer."

What a royal time we had at the National Fish Day Dinner! Keep it fresh in your minds and you will always get inspiration for the cause. The success of National Fish Day is just another example of what GREAT BIG MEN can do when co-operation is the spirit of the hour.

The fact that a family of five can procure a good square meal for fifty cents sounds like a miracle in these days of high cost living. But it is nevertheless a fact and it is only a Fried Fish and Chip Shop that such a miracle of economical feeding could be accomplished.

The Fried Fish and Chip business has a real future before it and if the Montreal men will keep to the game the time will come when we will boast of an Ancient the Honorable Guild of Fish Fryers similar to the organization which flourished in London, England.

Think of it! The latest convert to the Fried Fish business in no less a personage than Lord Leverhulme---a Peer of the Realm---the Prime Minister of British Industry. There is a bunch of encouragement for the Montreal Fish Fryer when a millionaire peer endorses the worth of your vocation to the community and even joins your ranks.

Keep up to date you Montreal retail fish men! Let the spirit of enterprise you showed for National Fish Day be an every day spirit. Also, let me say that the day of the dirty, odorous, fly-specked fried fish shop is past. Up-to-the-minute Fried Fish Palaces is what is needed to cater to an up-to-date and particular public.

There's a lot in a name. What should it be? Fried Fish and Chip Shop? Fish Supper Bar? or Sea Food

Grill? Send in your suggestions care of the Editor and we might make a start in Montreal.

Messrs. Mitchell Bros., of Rosemount catered for the wedding feast of a young French-Canadian couple and fish and chips was the principal fare. A whole wedding feast for five dollars! Can you beat it? The H. C. of L. got a bump that time, yet our people and our newspapers are howling about the cost of eating. There are none so blind as those who won't see.

Harry Woolmer of the Wellington Fish Store has opened another store at the North End on Beaubien Street. He has secured a good stand and under his good management the vogue of fish eating should increase in the district which he aims to serve.

Now, Mr. Producer and Mr. Wholesaler! It is up to you to co-operate closely with us in "The Game". It is you that we depend on. We are aware of your troubles with bad weather and transportation, but are you aware of ours? Do you really study us as much as you ought? We are your RIGHT HAND MEN. We hand the goods out to the consumer and we hear and hear the brunt of his kicks and complaints.

Give us good fresh stock. See that it is handled carefully (not with a pitch-fork); have it well packed and chase it along to us. We'll take care of the rest. The Montreal retailer is daily doing educational work---shouting from the house-tops the great propaganda of "Eat More Fish", but to be effective, the producer and wholesaler must co-operate with us and sustain our efforts in every way. If this spirit does not dominate your business, then get out of the running as you are only holding us back and putting rosin instead of grease on the Skids of Progress.

Acadia Gas Engines Popular

We draw attention to the advertisement of the Acadia Gas Engines, Limited, which will be found on another page of this issue. The picture is the same as they have on their 1920 Calendar, and shows the typical fishing boat of the Shelburne, Yarmouth and Digby build and the 10 H. P. 2 Cylinder "Acadia" engine shows every possible detail from visible angles.

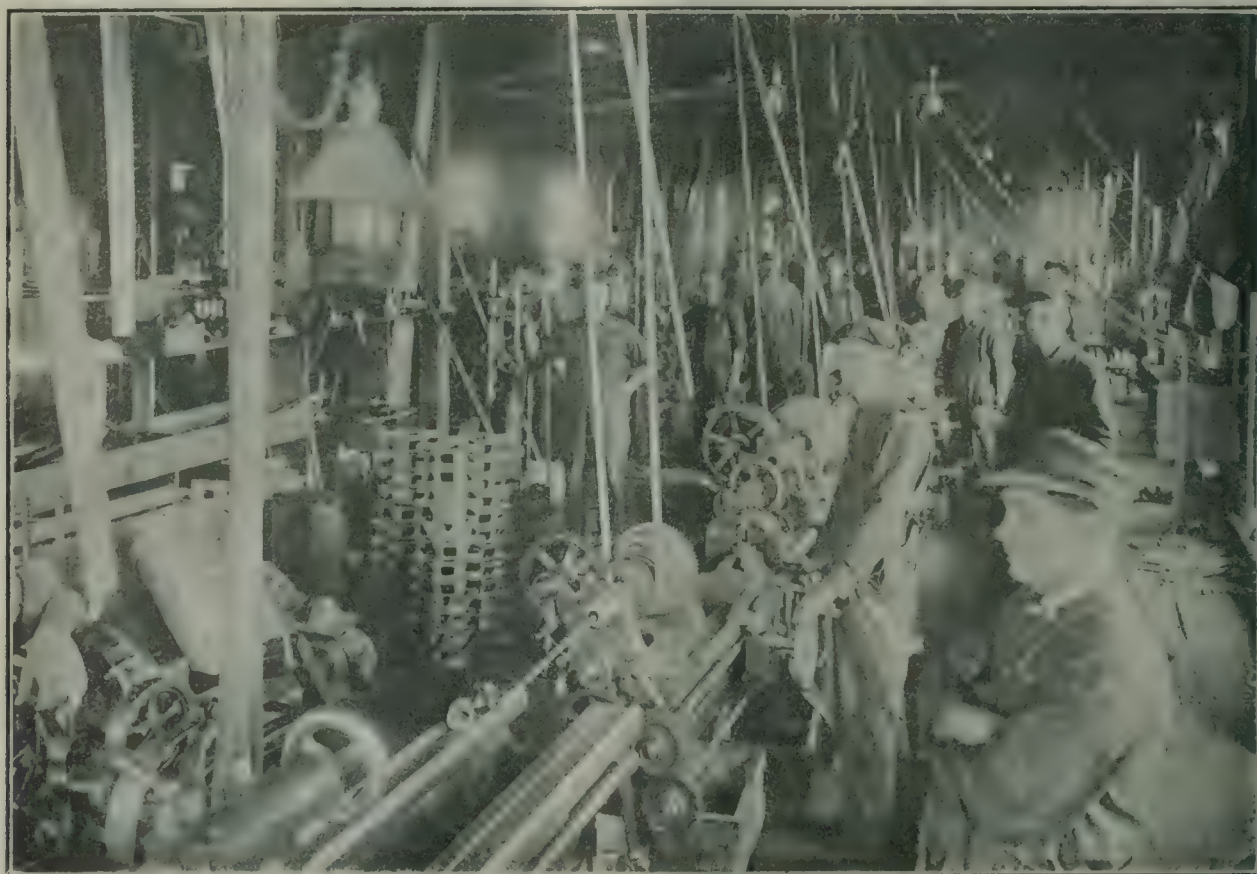
Mr. Anton Otto Fischer, who is recognized as one of the most famous Marine Artists in North America was commissioned by the Acadia Gas Engines, Limited, to execute the painting, and the Calendar is nicely finished in colors and in keeping with such a progressive firm as the Acadia Gas Engines, Limited.

This Company has one of the most up to date Ma-

chine Shops in the Maritime Provinces; in fact, one that will compare favorably with any Machine Shop in Canada. Starting 12 years ago in a building 32 x 50 feet, with an output of 35 engines per year, this Company, under the management of Mr. W. T. Ritcey has grown to such an extent, that today they occupy sixty-five thousand square feet of floor space and have a capacity of one engine every forty minutes, and this speaks volumes for the "Acadia" and business methods of this Company. They had the usual success last year, having an increase of sales of 40% over 1918. The engine they manufacture chiefly is of the Make & Break Heavy Duty Type, and in addition to their large business in Canada they control between 40 and 50% of the engine business in Newfoundland. The rough coast of Newfoundland is known to all, and the

month consisting of 307 engines, so it will be no surprise if they beat their own record next month.

Mr. Ritcey, realizing that the trade also requires a 4 cycle engine, has engaged one of the best designers in the United States and will be manufacturing immediately Heavy Duty 4 cycle engines. They will also have Stationary Engines of their own manufacture on the market this month, and we predict the same success will follow the 4 cycle Marine and Stationary engines as followed the 2 cycle "Acadia". They know what the trade requires and manufacture accordingly, and we feel sure that any one who is desirous of purchasing either a Marine or Stationary engine will do well by consulting the Acadia Gas Engines, Limited, Bridgewater, N. S.



A Corner in the Machine Shop of Acadia Gas Engines, Limited, Bridgewater, Nova Scotia.

fact of the "Acadia" meeting with such success there shows it must be an engine most suited for the fishermen. They make large shipments regularly to St. John's, where they have their Newfoundland Branch, and last spring they had a train load in one shipment. At the time of making this shipment, it was thought it was not only the largest shipment of Marine Engines made in Canada up to that time, but would be a record which would stand for some time. The shipment referred to consisted of 355 engines, with their complete outfits ready to install in the boats, and although the demand for Marine Engines is not as great in the Fall as in the Spring yet they made a single shipment last



L. W. Gill, New Director of Technical Education

Professor Lester W. Gill, lately appointed Director of Technical Education to administer the ten million dollars voted by the Dominion for distribution to the provinces, was born in Prince Edward Island in 1871,—a son of the farm, English on his father's and Scotch on his mother's side. After getting a good elementary education in the public schools of "The Island", he left home at the age of fifteen and spent three years in commercial work in the United States. In 1892 he entered McGill University choosing the course in Mechanical Engineering. He graduated in 1896 with honours and the gold medal. He then took a post graduate year in Electrical Engineering with re-search work in magnetism, and was awarded an 1851 Exhibition Scholarship. This was held for two years one of which was spent in research work at McGill University and the other at Harvard where he took up special studies in physics and mathematics.

After this distinguished course as a student, Mr. Gill took up commercial engineering work with the Westinghouse Electric and Manufacturing Company, where special opportunities were offered for the study of manufacturing methods and shop practice.

In 1900 Mr. Gill was appointed Professor of General Engineering in the School of Mining, Kingston (at that time affiliated with Queen's University.) The rapid expansion of this school into a Faculty of applied science made it necessary to organize and develop courses of study in all the branches of engineering. This gave the opportunity for limiting Professor Gill's work, first to mechanical engineering and later to electrical engineering. About this time he was called upon to design and superintend the installation of a central heating plant at Queen's University, the first large central heating plant installed in Canada. Professor Gill's work as a teacher has been characterized by the same clearness of thought and keenness of perception which enabled him to win honours as a student and to gain and keep the confidence of manufacturing concerns.

In January, 1915 he volunteered for overseas service. At that time he was in command of the University Company of Field Engineers, Captain Macphail having gone overseas with a company in the first Division. Professor Gill's training in the University Company prepared him for the task which he then undertook,—to recruit from the students and graduates a battery of Field Artillery for overseas service. His mechanical ability and training enabled him to become quickly efficient in the handling of the guns. The Militia Department accepted the University's offer on Nov. 1st, 1915, and on February 3rd, 1916, Lieut Gill was promoted to the rank of Major and proceeded overseas in command of the battery (later the 46th) which he had recruited and organized in less than three months. After five months training in England, Major Gill was sent to France in command of the 46th. Battery, which was then a part of the 11th Brigade. He remained in command of this unit until March 26th 1917, when the 11th Brigade was disbanded, consequent upon the decision to change the Canadian Field Artillery from 4-gun to 6-gun batteries. Subsequently Major Gill was



PROFESSOR LESTER W. GILL.

given command of the 23rd Battery and later of the 45th Battery.

After the taking of Vimy Ridge, Major Gill was compelled to retire from combatant service, on account of ill-health, due principally to the effects of gas. After eight weeks in hospital, he was requisitioned by the War Office for special technical duty with the Ministry of Munitions, on which service he spent nine months. In September, 1918, he applied for return to combatant service and the application was granted. He was under orders to return to France when the armistice was signed. At that time application had been made by the Khaki University for his transfer to the Educational Services. As the fighting was over, Major Gill decided that his services could best be utilized in the work of retraining men for civil life as a beginning of reconstruction. Early in December, 1918, he was appointed Assistant Director of Educational Services, in which he was responsible for the administration of all the work of the Khaki University in England. The Khaki University having been disbanded in August, 1919, Major Gill returned to Canada and accepted a temporary appointment to his old position in Queen's University. He was appointed Director of Technical Education in December, a post for which he is peculiarly well qualified by his education, wide experience, tact, and energy. These qualities have had public recognition in other ways. On two occasions Professor Gill represented Canada at International meetings of the International Electro-technical Commission, and he is one of those chosen by his fellow engineers as a member of the Canadian Engineering Standards Association.

Labels

WE
SPECIALIZE
IN
VARNISHED
SALMON,
HERRING
AND
PILCHARD
LABELS

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B.C. PRINTING & LITHO. LTD.
VANCOUVER, B.C. CANADA.

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O'Connor's Fish Market

For all Varieties of

FISH

1, 2 and 3 St. Antoine Market
MONTREAL



Protect Your Business

USE a Reliable Ignition Battery—most dependable for your power boat, bell, or any other battery use.

The Reliable Ignition Battery gives longer service because it is fitted with the **Big Brass Cap** that gives you the maximum spark—puts all power to work.

The Reliable Ignition Battery is sealed in pitch, and is moisture-proof. It is also tested three times before it reaches you in order that the high standard of Reliable quality may be uniformly maintained.

The Reliable Ignition Unit No. 8216 is built for heavy engine work or other hard and exacting ignition purposes.

Reliable Flashlights contain the same Reliable quality. Complete your equipment with a Reliable Flashlight, a handy and safe pocket light.

Sold by all dealers.

RELIABLE

TRADE MARK

"Lively and Lasting"



THE DOMINION BATTERY CO. LIMITED

736 DUNDAS STREET EAST

TORONTO

CANADA

Standard On Every Fishing Bank



FRISCO STANDARD

Fishing Fleet Owned
by Fred L. Davis Co.,
Gloucester, Mass.

All of these boats are
powered with "Frisco
Standard" engines.

FISHING OUT OF GLOUCESTER

There are many schooners like those shown above powered with "Frisco Standard" motors that are noted on the banks for their reliability and steady performance. In the New England fishing fleet just as in the fisheries of the Gulf of Mexico and the great salmon and halibut fisheries of the Pacific Coast, the "Frisco Standard" is rapidly becoming recognized as the standard motor power for all fishing vessels.

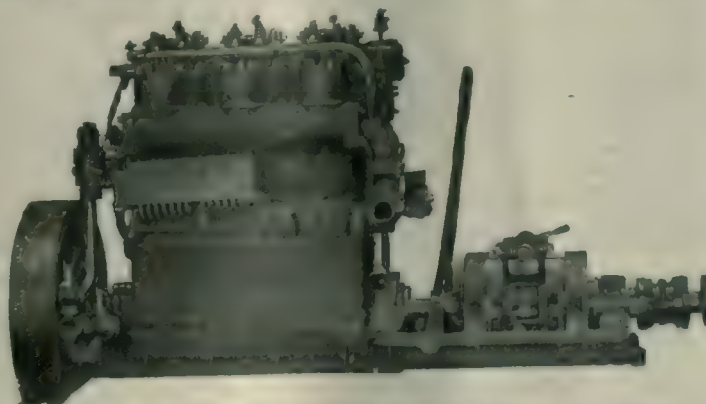
The boats shown above
are

"VICTOR"

95 ft. long, powered
with a 110 h.p. "Frisco
Standard"

"AGNES"

90 ft. long, powered
with twin 40 h.p.
"Frisco Standard"



"IMPERATOR"

106 ft. in length over
all, powered with 110
h.p. "Frisco Standard"

"VEDA W. MCKOWN"

106 ft. over all, pow-
ered with 110 h. p.
"Frisco Standard"

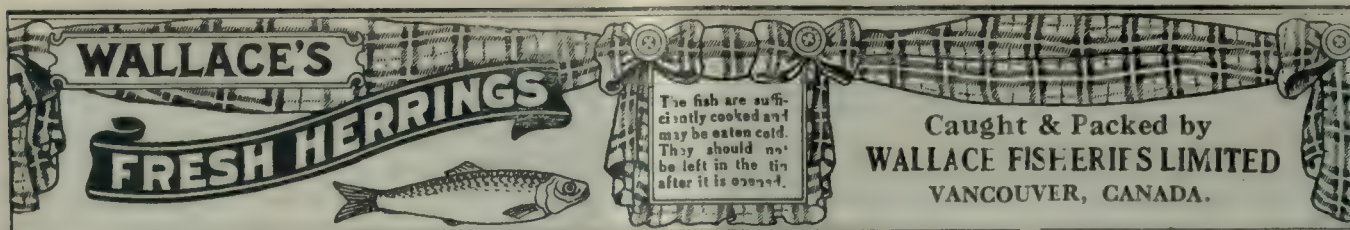
In the World's Great Fishing and Work Boat Fleets,
the "Frisco Standard" is the Supreme Power Plant

SEND FOR LATEST LITERATURE AND COPY OF STANDARD "BOAT BOOK"

STANDARD GAS ENGINE COMPANY

OAKLAND, CALIFORNIA

SALES AGENTS FOR EASTERN CANADA—A. R. Williams Machinery Company, Toronto, Montreal and St. John, N.B.



Tell Your Customer

That he can sell a case of
WALLACE'S CANNED HERRING

where he sells a can. A man buys a box of apples. Why not a case of canned herring? It will keep indefinitely.

TRY IT.

WALLACE FISHERIES, LIMITED

VANCOUVER BLOCK,

VANCOUVER, B.C.



FOOD PRODUCTS

Canadian - American - Oriental
 Salmon - Herring - Pilchards

Canned Fruits and Vegetables—
 Dried Fruits—Fruit Pulp—Milk—
 Honey—Jams—Peanuts—Walnuts—
 Dried Beans—Pies—Rice—
 Tapioca—Whole Spice—Oils—
 Tallow—Apples—Potatoes—Onions—
 Lumber.

*Canadian Canned
 Cured and
 Smoked Fish*

O'LOANE, KIELY & CO., Ltd.

HEAD OFFICE: VANCOUVER, CANADA

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 CABLE ADDRESS: "BRITSALMON" Bank Reference: The Dominion Bank, Vancouver



CABLE ADDRESS:

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VANCOUVER

BIRKS CRAWFORD & CO.

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VANCOUVER, - B. C.

CODES:

A.B.C. 5th
 BENTLEYS
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Salmon
 Pilchards

CANNED FISH

Herring
 Clams

OUR SPECIALTY—ACTING AS BUYER'S CANADIAN REPRESENTATIVES
 C. I. F. Prices Quoted

W. R. SPOONER

Wholesale and Commission Dealer

FISH OF ALL KINDS

119 Youville Square, - MONTREAL

*I am in the Market at all times to Buy or Sell on
Commission, Fresh, Frozen Smoked and Salt Sea
and Lake Fish in Carload Lots or less.*

CORRESPONDENCE SOLICITED

REPRESENTING

National Fish Company, Limited

Halifax and Port Hawkesbury, N.S.

OWNERS AND OPERATORS

Steam Trawlers—"VENESTA" and "LEMBERG"

"NATIONAL BRAND"

Haddies, Fillets, Kippers,
Bloaters, Scotch Cured Herring

PRODUCERS

Fresh, Frozen and Salt
Sea Fish

J. Bowman & Co., Port Arthur, Ont.

Wabakin Fish Co., Montreal, Que.

A. W. Fader, Canso, N.S.

Established 1874

D. Hatton Company

MONTREAL

Largest Receivers and Distributors

of all kinds of

F I S H

IN THE DOMINION

Experts in the handling of

Bulk and Shell Oysters

**Proprietors of the NIOBE BRAND Haddies, Fillets,
Kippers, Bloaters and Sardines in the
Purest of Olive Oil**

**Also IVORY BRAND of Boneless Codfish put up in
1 and 2 lb. Blocks, 20 lb. Boxes**

*Whether you want to Buy, Sell or Talk FISH, communicate with us
It will always pay and interest you*



When Men Go To Sea—

—battling their way through savage storms and shrieking gales they must be protected from the spray of freezing water and knife-like gusts of wind—they **MUST** have dependable, comfortable, long-wearing Boots—and that is why—

FISHERMEN have invariably chosen Goodrich "Hi-Press" Boots.

We have spent over \$1,000,000 perfecting a line of rugged, extra service—just a little different, and just a lot better—Rubber Footwear for the use of you men who go to sea.

Goodrich "Hi-Press" Footwear is made with the exact knowledge of what you fishermen must have to withstand and bear-up under exposure to halibut sputum; they are made in **ONE PIECE**; they will not leak, rip or crack; there will be no half-soling.

GOODRICH

"HI-PRESS" RUBBER FOOTWEAR

This better kind "With the Red Line 'Round the Top" is for **YOU**—the Fisherman.

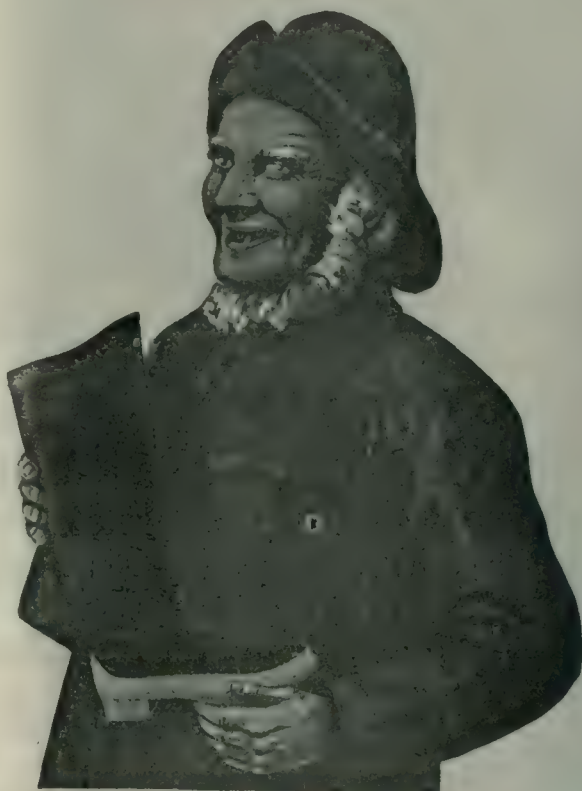
THE B. F. GOODRICH RUBBER CO.
The City of Goodrich—
AKRON, OHIO

*The Brown "Hi-Press" Storm King
—all that the name implies*



Veribest

*Especially
Constructed
for
FISHERMEN*



The All White
AND
White Sole Boots

Manufactured by

The Independent Rubber Co., Limited,
Merritton, Ontario

FISHERIES



BRANCH

In addition to the full statistics of the Fisheries which are published yearly in the Annual Report, the Department issues quarterly bulletins containing statistics of the sea fisheries and general information in regard thereto. Copies of these will be sent free to any applicant.

The value of the Fisheries of Canada is now over \$52,000,000.00 annually.

The demand in the home markets for fresh, fresh-frozen and mildly cured fish is expanding very rapidly. The Department has arranged for the use of refrigerator cars for transporting fish from the Atlantic coast to Montreal and Toronto by a fast train known as the "Sea-Foods Special". On the days on which this service does not operate, the Department pays one-third of the express charges on shipments of fresh, or mildly cured fish from the Atlantic coast to points in Quebec and Ontario. It also pays two-thirds of the railway transportation charges on shipments of fish other than halibut and salmon from the Pacific coast as far east as Manitoba inclusive.

Close Seasons for Fish in Force on December 1st, 1918

Kind of Fish:	Nova Scotia.	New Brunswick.	P. E. Island.	Quebec.
Bass (Achigan).....				1 April to 15 June.
Maskinonge.....				15 April to 15 June.
Ouaniche.....				1 Oct. to 30 Nov.
Oysters.....	b1 Jan. to 30 Sept.	b1 Jan. to 30 Sept.	b1 Jan. to 30 Sept.	b1 Jan. to 30 Sept.
Quahaugs.....	Oct. 1 to May 10 & July 1 to Aug. 31.	Oct. 1 to May 10 and July 1 to Aug. 31.	Oct. 1 to May 10 and July 1 to Aug. 31.	
Pickeral.....				April 15 to May 15.
Salmon (netting).....	Aug. 16 to Feb. 28.	Aug. 16 to Feb. 28.	Aug. 16 to Feb. 28.	Aug. 1 to April 30.
Salmon (angling).....	dAug. 16 to Jan. 31.	dSept. 16 to March 31.	Sept. 16 to March 31.	dAug. 16 to April 30.
Smelts.....	cApril 1 to June 30.	cMarch 1 to June 30.	cApril 1 to June 30.	dApril 1 to June 30.
Sturgeon.....		June 1 to July 1.		dJune 1 to June 30.
Speckled Trout.....	Oct. 1 to March 31.	Oct. 1 to March 31.	Oct. 1 to March 31.	Oct. 1 to April 30.
Salmon Trout.....				Oct. 15 to Dec. 1.
Whitefish.....				
Kind of Fish:	Ontario.	Manitoba.	Saskatchewan and Alberta.	British Columbia.
Bass (Achigan).....	a1 Jan. to 15 June.			
Maskinonge.....	1 Jan. to 15 June.			
Ouaniche.....				
Oysters.....				May 1 to Aug. 31.
Quahaugs.....				
Pickeral.....	dApril 15 to May 15.	dApril 15 to May 31.	dApril 1 to May 15.	See regulations.
Salmon (netting).....				
Salmon (angling).....				
Smelts.....				
Sturgeon.....		Oct. 16 to June 15.	Oct. 16 to June 15.	
Speckled Trout.....	dSept. 15 to April 30.			
Salmon Trout.....				
Whitefish.....	dOct. 5 to Nov. 30.	dSept. 15 to Nov. 19.	dSept. 15 to Dec. 15.	

a—Except in Lake Erie west of Pt. Pelee where close season is May 24 to July 15.

b—Except on leased areas, where close season is from 1 July to 31 Aug.

c—Bag-net fishing season Dec. 1 to Feb. 15; gill-net

fishing season October 15 to February 15. Licenses required for bag-nets or gill-net.

d—As many exceptions to the close times above noted obtain, it is suggested to those interested that they procure a copy of the Fishery Regulations applicable to the Fisheries of the Province in which they are interested.

Exceptional Angling == Opportunities ==

are offered by the Province of Quebec, which is the only one that leases exclusive hunting and fishing territories over large area of forest, lakes and rivers both to Clubs and private individuals, with the privilege of erecting camps thereon.

Membership may be obtained, if desired, in many existing clubs, with camp privileges already provided, and often with the right of erecting private summer homes on suitable sites on the club territory.

On all unleased Crown Lands and Waters, angling and hunting are absolutely free to residents of the Province, and the only charge to non-residents is the cost of the non-resident fishing or hunting license.

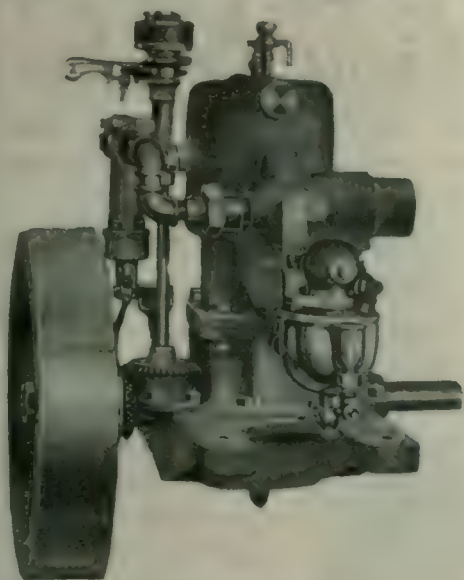
To the Wholesale Fish Trade

The attention of dealers who receive their fresh fish from Portland and other foreign sources is directed to the exceptional opportunities of obtaining their supply from the *Baie des Chaleurs* and the North Shore of the St. Lawrence, to their own advantage and that of their customers, and to the benefit of the fishermen of the Province of Quebec.

For all information apply to——

**The Minister of
Colonization, Mines and Fisheries
Of the Province of Quebec**

IMPERIAL MOTORS



5 H.P. Model "A"

When you buy an Imperial you are getting an engine backed by years of service so satisfactory that Imperial Motors are the standard fishing boat engines of Eastern Canada and are to be found in every fishing district in Canada and Newfoundland. They are the best that money, skill and experience can produce.

General Dimensions of 5 H.P. Model "A"

Bore of Cylinder	4 1/2 inches
Stroke	4 "
Weight, engine only	230 lbs.
Complete shipping weight, with outfit	420 "
Diameter of Propeller, 2-blade	18 inches
Diameter of Propeller, 3-blade	16 "
Shaft diameter	1 inch
Shaft length	5 feet

For full information regarding this or any other Model send for catalog. State size engine required.

The Motor that Makes the Mark.

BRUCE STEWART & COMPANY, LIMITED.

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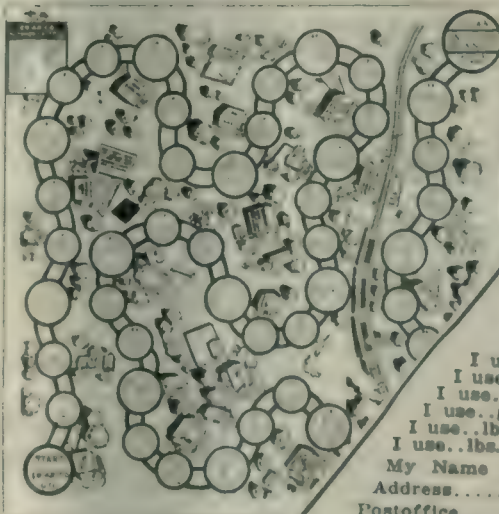
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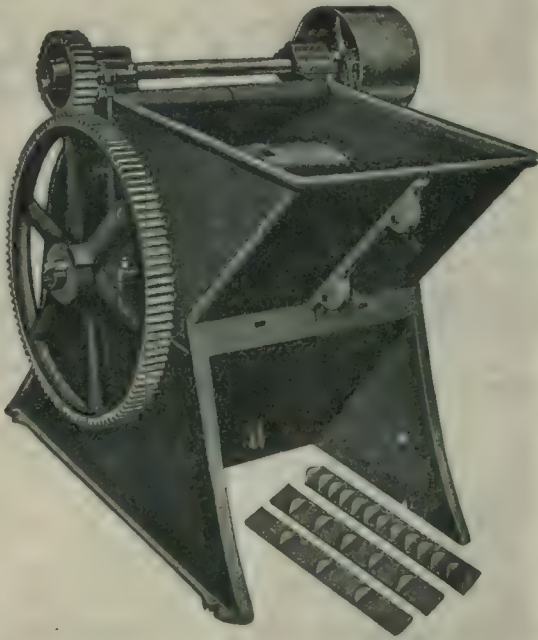
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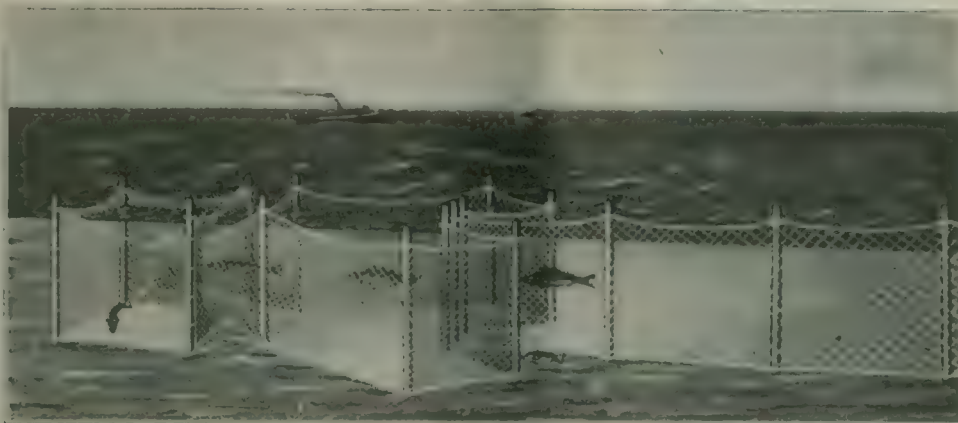
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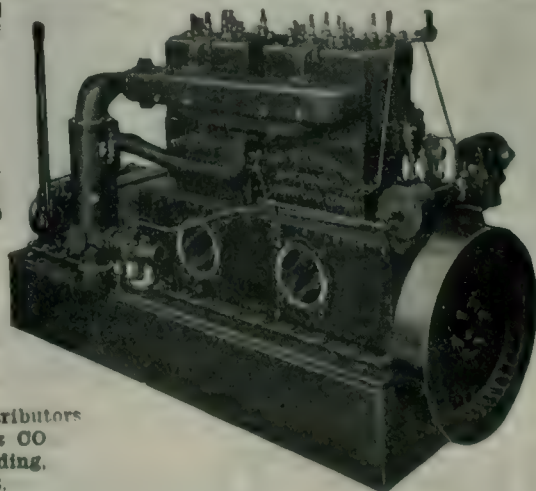
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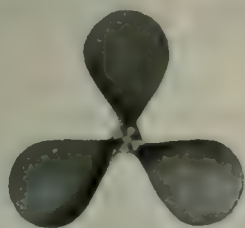
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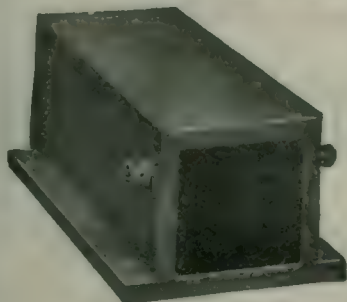


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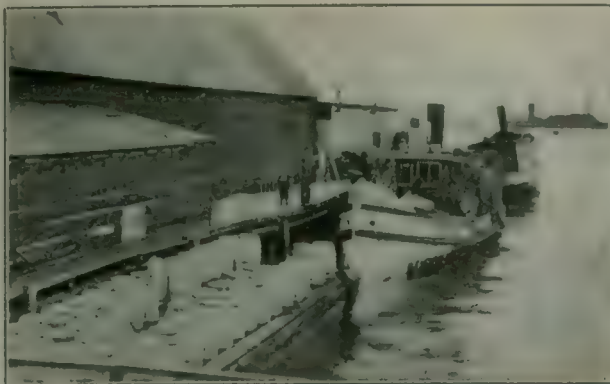
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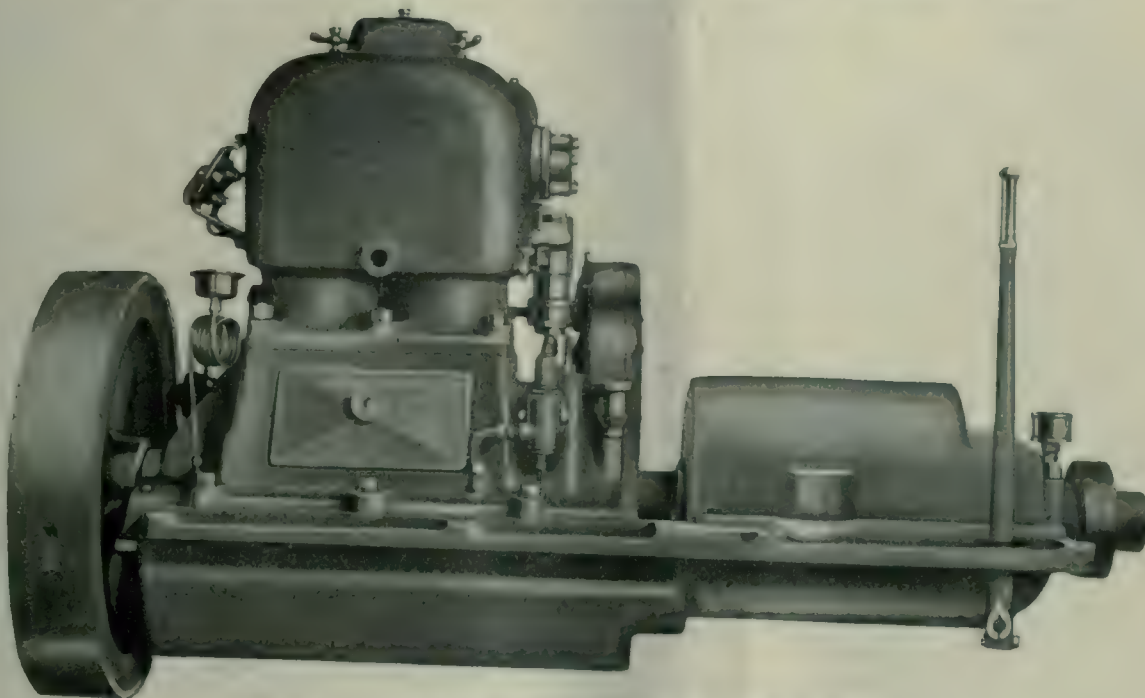
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- - - ST. JOHN'S NFLD.

THE CANADIAN FISHERMAN

Official Organ of the Canadian Fisheries Association

VOL. VII.

GARDEN CITY PRESS, Ste. Anne de Bellevue, FEBRUARY, 1920.

No. 2.

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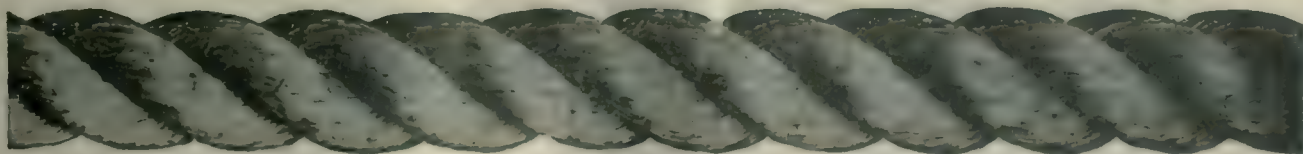
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Although the British Columbia fisheries show remarkable development in some branches, it may be confidently stated that the Industry is still in the initial stage, for 80 per cent. of the yearly output is credited to salmon, which (with the exception of halibut) is the only fish which has so far been taken in large quantities.

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For information regarding British Columbia's Fisheries, write

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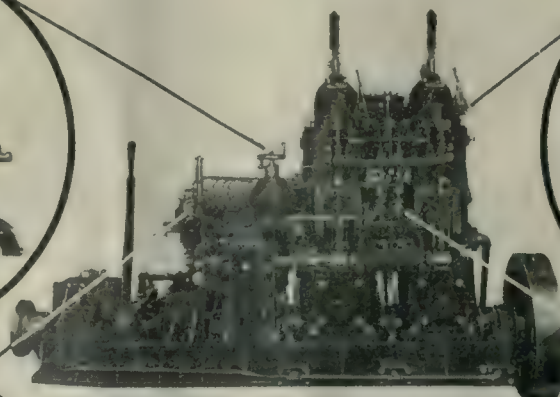
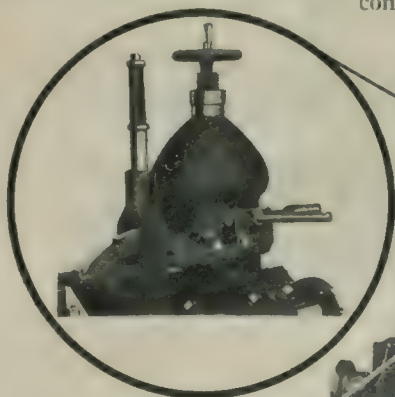
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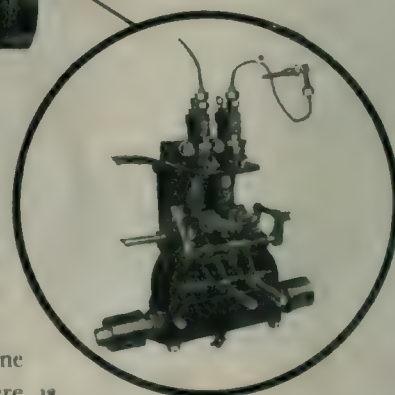
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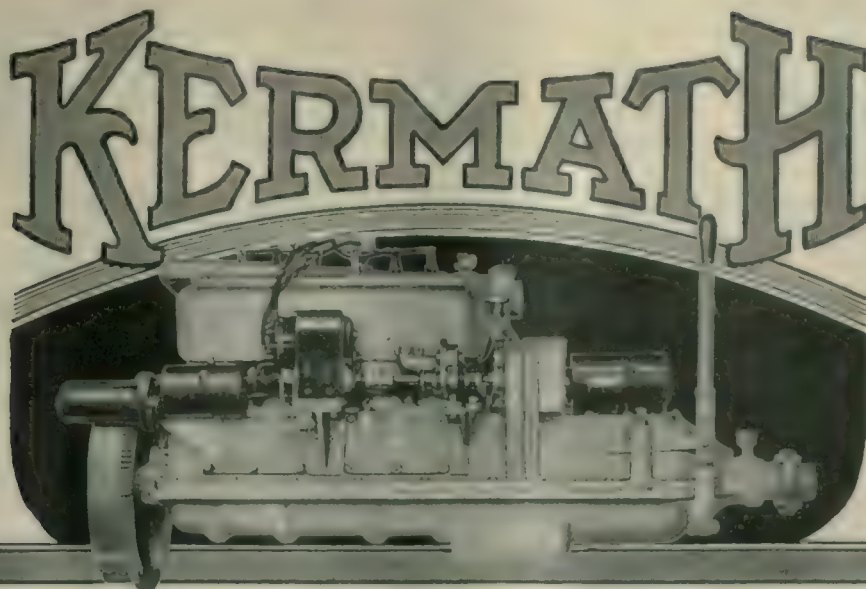


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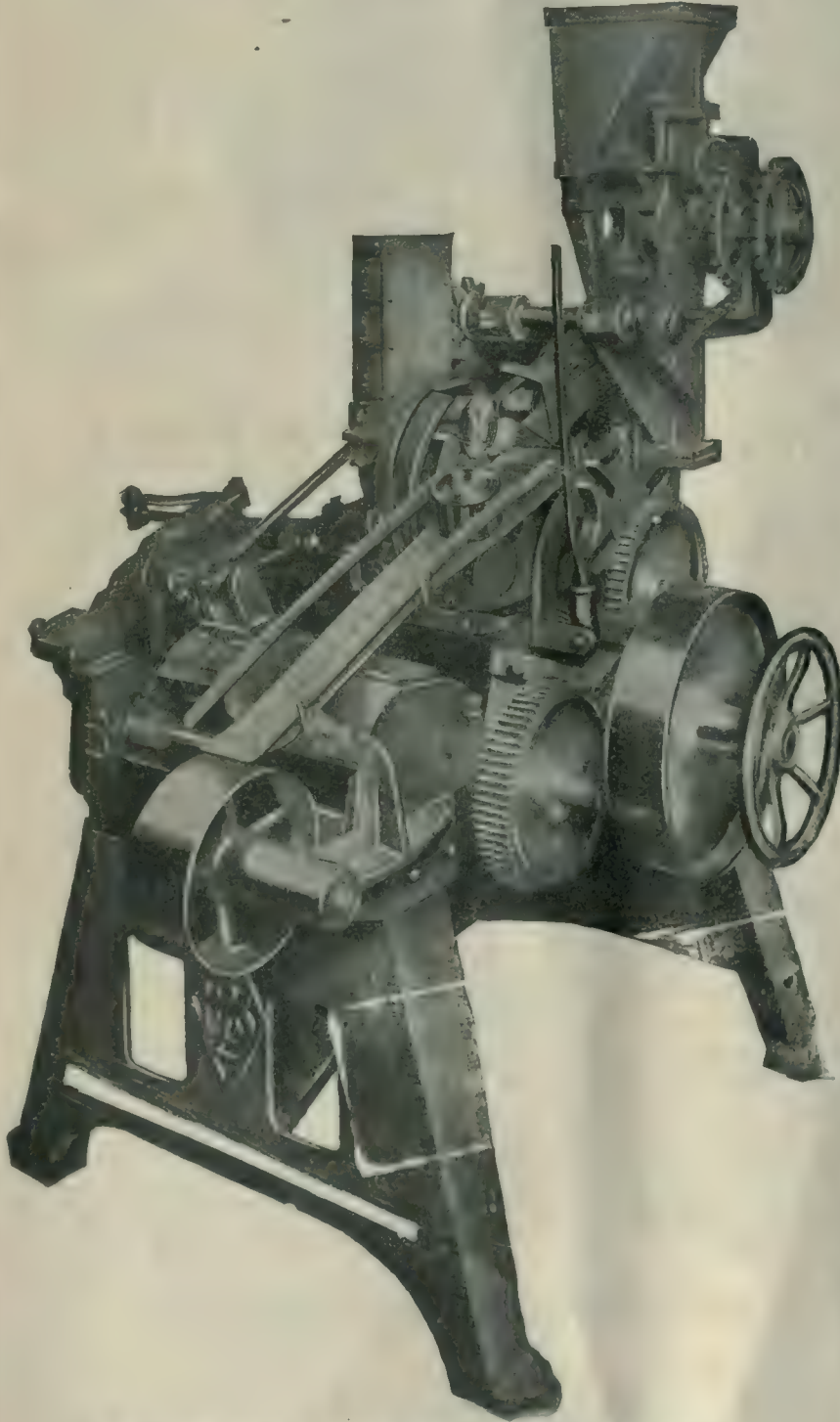
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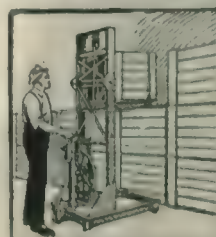
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Mr. Cobb was for 17 years a field agent of the U.S. Bureau of Fisheries, and in the course of his duties visited practically every fishing settlement and packing establishment in the United States many times; later was editor of the Pacific Fisherman, and now is Director of the College of Fisheries, University of Washington.

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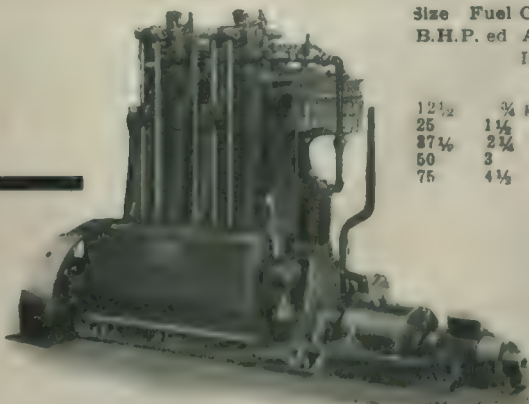
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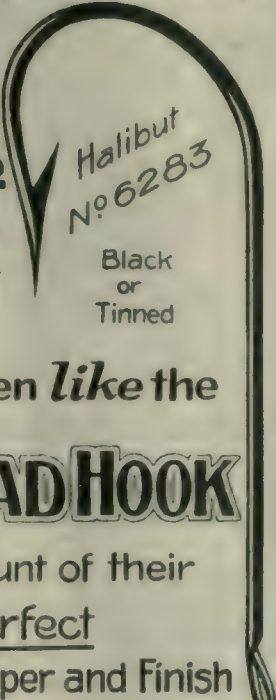
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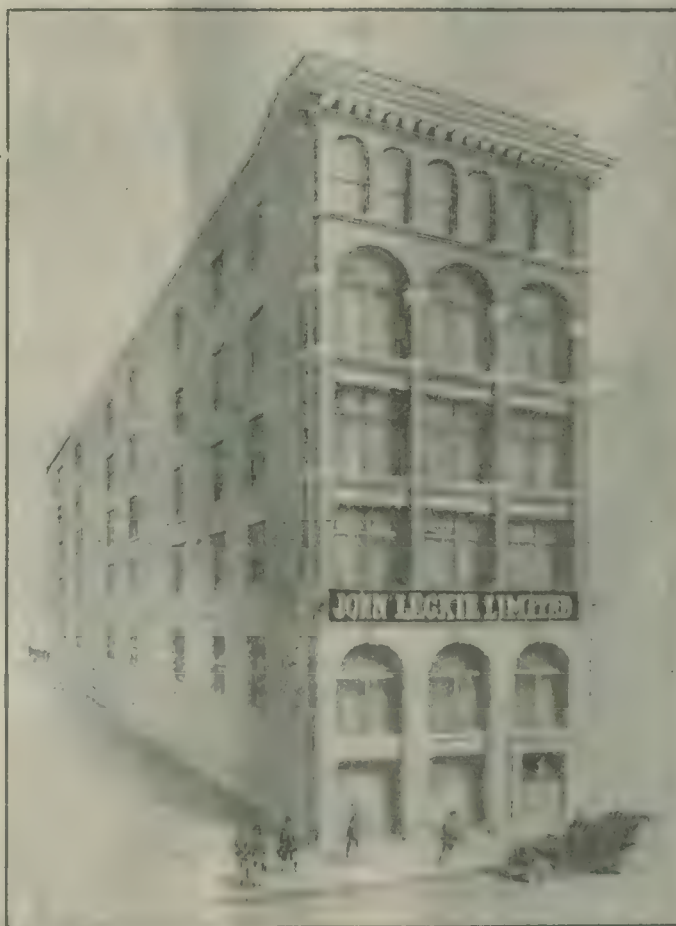
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EditorAnnual Convention—Lake Erie
Fishermen's Association

The annual convention and get-together of the Lake Erie fishermen has come and gone and, like its four predecessors, it will leave its impress on the fishing industry of Ontario. A lusty youngster of five years of age, the Lake Erie Fishermen's Association is developing every year, and it has never been averse to asking for what it wanted. It wants several things this year and it is going to see that it gets them if plain talking will procure it. The sturdy men of brawn from the fishing ports on the south shore of the lake are fully alive to their own interests and to the interests of the Canadian fishing industry as a whole. Organization has already done much to improve conditions under which they operate but there are reforms yet to be secured and the Lake Erie Fishermen's Association are going after them. This year they are going to ask the Government for fairer treatment in respect to the high licenses exacted for fishing privileges on the south shore and will point out that there is too great a discrepancy between the \$250 license per tug for the Canadian fishermen and the \$75 per tug which allows the American fishermen to fish along the shores of three states across the border. They will also point out that even with this high license rate they are over a dollar a ton removed from their biggest market in the States. Pressure will also be brought to bear upon the Government with a view to the abolition of Government control. With the war over and the need for supplying food to the Canadian army in the field having ceased to exist, the Association contends that the Ontario Government should go out of the fish business and allow the fishermen a free hand to develop their own business. These and other matters affecting the welfare of the fishermen of Lake Erie and the Great Lakes gen-

erally were threshed out at a very successful convention and of great interest to the people of Ontario generally was the decision to hold a big regatta at Port Stanley on July 1st and 2nd this year under the auspices of the Association.

Even fisher folk can get ill and the attendance at the convention this year was somewhat smaller as a consequence of the prevailing epidemic which reached the health-giving shores of Lake Erie. It also kept several of the speakers and some of the inland wholesalers away. Nevertheless there was a good-sized get-together and under the capable chairmanship of A. S. Brown of Kingsville, the past and re-elected president of the Association, some very profitable sessions were held. The Grand Central Hotel in St. Thomas was the headquarters and here the veterans of the industry on Lake Erie met socially and in a business way. The gathering was a happy reunion of a substantial body of men who are engaged in developing one of Canada's great resources and whether gil-net men or pound-net men they were all out, not only for a good time, which they had, but for the best interests of the industry they represented.

The convention covered two days, the 11th and 12th, while the executive committee were in session on the 10th preparing the business for the regular sessions which were held in the council chamber of the city hall. The social side of the gathering was featured in a merry-making reunion in the hotel parlor on Wednesday night and other side-shows were staged in other rooms. The business sessions were concluded at 4.30 o'clock on Thursday afternoon and the delegates were soon homeward bound for their various ports with memories of a very profitable and enjoyable outing.

The Opening Session

President A. S. Brown opened the first regular business session of the convention on Wednesday afternoon and in extending a welcome to the delegates, referred to a criticism that had been heard that all the business or the organization had been cut and dried in the sessions of the executive committee. He pointed out that all the business transacted by the committee came before the convention in open session and he hoped that every man would take the opportunity for the fullest and frankest discussion. It was not the desire of the committee to railroad any proposition through, and he proposed that there should be free discussion on any resolution that came up.

Welcome by Mr. McVicar, M.P.P.

In extending a hearty welcome to the convention, Malcolm McVicar, M.P.P. for East Elgin, said that he had come to the convention with the idea of gathering knowledge and not to impart it. It was not within his province to tell fishermen how to catch fish, but as a



MALCOLM McVICAR, M.P.P., for East Elgin
One of the Speakers at the Convention.

member of the Legislature he was desirous of securing information in order that he might urge upon the Legislature that the fishing industry of Canada must be fairly and squarely dealt by both in the interests of the fishermen and of the public at large. What was good for the fishermen must also be good for the general public at large. What was good for the fishermen must also be good for the general public which consumed the fish. It had always been a question to him as to why there were not more Government hatcheries and he could not understand why a hatchery had not been successfully operated at Port Stanley. He could not see why it was not possible to operate fish hatcheries at any of the ports on the Great Lakes. He pointed out that most activities were now operating on a co-operative basis and he urged the same for the fishing industry with a view to broadening the vision of those in the industry on all matters connected with their in-

terests. In this way would the greatest good be accomplished while those engaged in the business would likewise be broadened and developed.

President Brown assured Mr. McVicar that the Association was only too willing and anxious to co-operate with the new provincial government and give all assistance possible in solving the various problems.

Good Work of Government Hatcheries.

Intensely interesting was the address given by J. A. Rodd, Dominion Superintendent of Hatcheries, Ottawa, who dealt with the activities of his department, and explained the wide scope of the work that was being done with a view to propagating the Canadian fishes. Mr. Rodd said:

Canada's wonderfully rich fisheries have always had a most important influence on her past history and hold a most important place in her present day life.

Some historians maintain that the first Europeans to cross the Atlantic were Norse Fishermen who visited our shores about 800 years ago, or some 400 years before the voyages of Columbus, and it is well known that over 400 years have elapsed since the Basques and Beltons first resorted to our eastern shores for fishing. When Sebastian Cabot discovered the coast of Labrador in 1497 he found the generic name, "Bacallaos," which means cod in the language of the Basques and from the following year, 1492, the English continuously operated the fisheries on our Atlantic coast. These fisheries were also prosecuted extensively by other European countries, and particularly by the French and Portuguese. Thus the first and chief result of the discovery of America was the establishment of a great fishery, and it is stated by the English statesman, DeWitt that "the navy of England became formidable by the discovery of the inexpressibly rich fishing banks of Newfoundland."

It was the prosecution of these fisheries that led to the first settlement and the eventual colonization of the North America continent. It is recorded that when the Puritans sent their agents to King James to obtain his consent to their going to America, the King asked "What profit might arise." They answered in one single word "fishing." The King answered "so God have my soul 'tis an honest trade, 't'was the apostles own calling," and he gave them his leave to go. As a result of the rich fishing available quite a number of permanent fishing settlements were established early in 1700.

As the first settlement and colonization of Canada was due to her wonderfully rich fisheries, so also were due most of the wars between the early colonists and in later days many of Canada's international questions. Nearly all the conflicts that took place between the English colonists, of the New England States, and the French colonists of what are now the Canadian provinces were directly due to or included disputes connected with the fisheries.

As her fisheries were responsible for Canada's discovery, colonization and some of her troubles, they are also responsible in a large measure for her development and her prosperity. Statistics of the Canadian fishing industry for 1917 are—persons engaged 95,122, fishery products value \$52,312,000, capital invested 47,143,000, exports value \$28,325,000. The statistics for the whole year are not yet compiled, but

sufficient figures are available to show that the value of the fisheries for 1918 will exceed that for 1917.

The Fisheries Branch, with Superintendents of Fisheries for Lower and Upper Canada, was established in 1858. Some of the activities of the present Fisheries Branch, now attached to the Department of the Naval Service during the past year were:—

1. Unanimous findings and a joint report to the respective Governments by the International Commission on the following important fishery questions between Canada and the United States,—

(a) Privileges to the fishing vessels of either country in the ports of the other.

(b) Rehabilitation and protection of the sock-eye salmon fishery of the Fraser River system.

(c) Protection of the Pacific halibut fishery.

(d) Fishing by United States wellsmacks off Canadian coasts.

(e) Protection of the fisheries of Lake Champlain.

(f) Requirements imposed on Canadian fishing vessels passing through territorial waters of Alaska.

(g) Protection of the sturgeon fisheries.

(h) Protection of whales.

2. Fur seal fishery.

Canada's net revenue for the sale of skins in 1918, under the treaty of 1911, will be in the neighborhood of a quarter of a million dollars.

3. Campaign for the greater protection of the lobster fisheries which included a conference at Halifax at which all those directly interested in the lobster industry were represented,

4. Transportation of fresh fish.

5. Biological research.

6. Fish culture.

7. Oyster culture.

8. Fisheries patrol.

9. Drift net fishing operations with a view to noting the movements of the herring and mackerel schools off the Atlantic coast.

10. Fish inspection.

11. Instruction in fish curing and packing.

12. Bait reporting service.

Among the proposed activities for the coming season is a more extensive patrol service for Lake Erie. A delegation from this Association waited on the Department in February 1917, and asked that the Vigilant be replaced by two, and, if possible, three small boats of the type of the Lake Erie fishing tug. The war made this request, for reasons that were explained to the delegation, quite impossible at that time, but as soon as conditions permitted after the expiration of the war tenders were invited for three boats. These tenders are now in the Department, and will be dealt with almost immediately.

The Fisheries Branch has done and is doing a great deal for the fishermen and fishing industry of Canada, but there still remains a great deal to do. The most recent addition to the Department is the division of Publicity and Fish Marketing, the Officer in Charge of which is here present. The Department has other developments under consideration, but these new developments as well as established services, can only obtain their objects with the fullest co-operation of all interested.

I understand that there was some discussion at your convention last year regarding the payment by the Federal Department of a fishing bounty to certain fishermen on the Atlantic coast, and the payment by the same Department of one-third of the express

charges on less than 1 car load shipments of fresh fish from the Atlantic to Montreal and Toronto, and from the Pacific to Winnipeg.

With regard to the fishing bounty I will go back to the Reciprocity Treaty of 1854 between Canada and the United States, under which, amongst other things fish and fish products of either country were admitted in to the other free of duty, and United States fishermen were allowed to fish in Canadian territorial waters off the Atlantic coast excepting in rivers and mouths of creeks, and for shell fish, and Canadian fishermen were allowed the same privileges on the Atlantic coast of the United States north of the 36th parallel, but these last mentioned were never used. This treaty was terminated in 1866, but its fishery provisions were revived by the Treaty of Washington of 1871, which also provided for the appointment of a Commission to determine the amount of compensation that should be paid by the United States to Great Britain as the difference in the value of fishery concessions granted to United States fishermen in Canadian waters over those granted to our fishermen in United States waters. The Commission awarded Great Britain \$5,500,000, of which \$1,000,000 was apportioned to Newfoundland. A sum equivalent to the interest on the Canadian portion of the award at about 3½% is appropriated annually, and paid to fishermen and vessels on the Atlantic coast. The initial object was to encourage the development of the off-shore fishery. The bounty is paid to those who suffered from the competition of United States fishermen, and to them alone. Owing to the large number of fishermen entitled to receive it, and the limited amount of the bounty, the net result is that each boat fisherman receives about \$3.50, and each fisherman about \$6.25 annually.

Regarding assistance in transporting sea fish to the large inland centres, in 1908 the Department undertook responsibility for the payment of one-third of the express charges on less than car load shipments from the Pacific to the Quebec, and Ontario, and from the Pacific to the Prairie Provinces. When this service was undertaken shipments of fresh, mildly cured, and fresh frozen fish from the Atlantic coast was so small that the railways did not find it feasible to place refrigerator cars even to be hauled by freight, at the disposal of the dealers. There were no refrigerator express cars for fish, and the rates for the ordinary express cars were so high as to preclude the possibility of rapidly expanding the demand in the large centres of consumption. With the assistance that has been given, however, this trade has expanded in a most encouraging manner. The transportation facilities have improved. The quantity of fish handled has increased to such an extent that the business is now on a sound basis, and the aid above referred to, viz., one-third of the express charges on L. C. L. shipments, was discontinued in August of last year.

This aid started and built up a most important trade with inland centres, and furnished the citizens with a wholesome, nourishing and cheaper food than they could otherwise obtain. It did not detrimentally affect the lake fishermen, as they have a sufficient and high priced trade for more than they produce. It found a market for a large quantity of wholesome and nourishing food that was not being utilized, and in a large measure was going to waste.

This aid was only given to shipments from the coast to the inland centres. It did not apply to shipments between points in the Maritime Provinces or between points in the Prairie and Inland Provinces.

THE GOSPEL OF PUBLICITY.

Following Mr. Rodd's address, another member of the Fisheries Branch of the Federal Government, J. H. Conlon, who has charge of the publicity propaganda under Mr. Rodd gave a description of the work being undertaken in the development of the home market for fish, through a vigorous publicity campaign. He said that he did not come to the convention with the expectation or the intention of making any remarks, but rather to be a listener. As he had been requested by the secretary to explain the work of the new division of the Federal Fisheries Branch, of which he is head, Mr. Conlon felt the time might be well employed in telling the functions of the publicity and marketing section. Its efforts, he said, may be embraced under three headings—publicity, marketing and transportation.

Regarding publicity, the aim is to educate the people of Canada to appreciate the value of fish as a food, both from the standpoint of economy and the proportion of nutriment derived. During the first half of 1919 a very liberal estimate of the per capita consumption of fish in Canada places it at twenty-three to twenty-five pounds. In the United States for the same period the per capita consumption is figured at nineteen pounds, while in the United Kingdom in 1918 it reached fifty-eight pounds. So it will be seen Canada is not a fish consuming country to any degree comparable with her status as a fish producing country. "In my opinion," said the speaker, "there should be united effort to increase local consumption. Our slogan should be—fifty pounds per capita. Figuring on the basis of 7,000,000 population, which is extremely conservative, this will mean an increased consumption of 175,000,000 pounds. You can see for yourselves what opportunity presents itself to you. Now is the time to capture the market, when meat is scarce, and all other foods are high. The fresh water fishermen, I believe, should use every effort to take their proportion of the trade."

As to the foreign markets, Mr. Conlon continued, there are tremendous possibilities, which, due to unstable exchange conditions and general chaos, cannot be systematically developed just now. It should not be assumed, however, that it is intimated that efforts in the external markets should be dropped. On the contrary energy should be exerted to drive the wedge now to be sent to its limit when times brighten.

"As far as I can judge, the chief concern of the Erie men is at present not a matter of markets, but rather regarding transportation. I hope to get a chance to confer with those of you who believe they are handicapped by insufficient accommodation. It is of interest to the industry as a whole that your product should reach its markets in the best possible condition, anything which militates against this must be rumored or relieved as fully as possible. I appreciate the fact that one hundred per cent of the difficulties you meet with cannot be connected, but a large proportion may be."

In endeavoring to create broader markets the speaker said, co-operation must be obtained all along the line from the producer to the retail store. If a man can be prevailed upon through publicity to sample an article,

the trick is done—if the goods back up the representations that have been made.

"My work, while for the industry primarily, works to your advantage directly, and I feel assured of your support."

At the conclusion of Mr. Conlan's address, N. S. Cornell, of Port Stanley, said that he did not want the impression to get abroad that the Lake Erie fishermen had little interest in furnishing fish to local consumers. This assumption had no basis in fact. Mr. Cornell declared that the Lake Erie fishermen had gone out of their way to supply fish to the Canadian consumer and lack of interest in this matter was not a charge that could be justly brought against them.

In this connection it was pointed out by Mr. Rodd that not more than two per cent of the product of Lake Erie was marketed in Canada, the chief market being across the line and when Mr. Cornell referred to the feeling in some quarters that it was impossible to get Canadian caught fish, an impression that was aggravated by the Ontario Government "sticking its nose into our business," Mr. Rodd replied that the feeling that it was impossible to get Canadian fish was not peculiar to Ontario. It was a general condition and the Lake Erie fishermen were not to blame for it. "You sell your product in the best market and you are not to blame for that. It is a condition of trade," said Mr. Rodd.

PROPAGATING THE FISH.

Bert Wescott of Kingsville, spoke briefly, and in the course of his remarks declared that unless the fishermen took greater care as to the preservation of the herring spawn and sent the eggs to the hatcheries, Lake Erie would soon be so depleted of herring as to make it hardly worth while remaining in the fish-catching business. The chief difficulty, he said, was not so much the quantity of the spawn sent to the hatcheries but with the quality. He pointed out that last fall 482 jars of herring spawn had been received and of these but 70 jars now remain. It would appear as if the fishermen should get together and devise some means by which the spawn can be secured. Much of the spawn now being received was either not properly fertilized, or killed. Ten jars of live eggs was much better than a whole hatchery of dead ones. Mr. Wescott was of the opinion that we have too many hatcheries at the present time, with not enough eggs to profitably operate them.

In the opinion of President Brown it was a shame to take the eggs and not properly fertilize them. He mentioned cases where eggs come in, in a frozen condition and strongly condemned the practice of sending the eggs to the hatcheries and have the department go to the expense of looking after them, only in the end to have the eggs destroyed. In urging more cooperation between the fishermen and the hatcheries Mr. Brown pointed out that many of the receptacles for shipping the spawn to the hatcheries had not been received last season until after the better part of the spawning season had passed. This could be remedied by more expedition in delivering the receptacles earlier when the fishermen would be in a position to take care of the spawn and see that they were got to the hatcheries.

In the opinion of N. S. Cornell, the poor quality of the eggs was largely due to the poor season last year. Storms had seriously affected the eggs and handi-

capped the fishermen in taking the spawn. In defense of the fishermen he said that they were doing the best they could in the matter, realizing that the lakes were their farms and had to be looked after and restocked.

Capt. Robinson of Port Dover questioned whether or not the fishermen were doing all they could and declared that it was up to the fishermen to see to it that when the run of fish was on they got the spawn. As it was now it appeared as if the fishermen were trusting too much to luck. The preserving of the eggs resulted in a benefit to the fishermen and to the nation as well. It did not matter how many receptacles the department sent out if the eggs were not properly fertilized. In view of the fact that the fishermen would be the first to reap the reward, he suggested that at each port make it a rule that one tug be named to lift forty nets each day and take the eggs to Kingsville. In numerous instances the fish were not taken from the nets four nights out in the lake with the result that the receptacles were filled with eggs not fit to be sent to the hatcheries. He maintained that the herring in Lake Erie were getting scarcer every year and the responsibility was with the fishermen, not with the Government, to take advantage of the run of fish and get the eggs when the run was on.

As noted in another column in this report, where the resolutions are printed in full, several matters calculated to improve the fishing industry will be urged upon the Government. In regard to the heavy license handicap Secretary Short said that the licenses exacted from the Lake Erie fishermen were the highest in the world and he thought this should be reduced more in accordance with the rates charged on the other side of the lake.

Mr. Barwell's Protests.

C. W. Barwell of Port Dover declared that the delegates were bound to profit through a frank and open discussion of these matters and he was pleased at the action of the president and executive committee in bringing these questions before the meeting. It had

been felt in the past that both the pound net and the gill net fishermen had grievances and now was the time to consider their bearing on the fishing industry in Lake Erie. It was up to the fishermen to do their part in combatting the unrest that had settled over the country and in his opinion the solution was in greater production. If the Government was sincere they should now be willing to remedy the existing grievances and to assist the fishermen in their efforts towards greater production. Mr. Barwell contended that the whole system of control by the Ontario Government was working an injury to the fish industry of the province and while the fishermen were willing to submit to it while it was necessary to produce more fish for home consumption, in order that beef and bacon might be sent to the Canadian troops at the front, there was no need for the Government to remain any longer in the fish business. No other lines of industry had been singled out for control as the fish industry had been.

On the subject of the big disparity between the licenses paid by the Canadian fishermen on the south shore of the lake and those paid by the Americans across the lake, Mr. Barwell pointed out that some tugs on the Canadian side had to pay as high as a thousand dollars for their license. The regular rate at the present time was \$250, while the American fishermen on the lake got their licenses for \$25 and this entitled them to fish along the shores of three states while they pay \$10 a net over there, \$50 was charged on this side. Coal cost \$1.50 a ton more, twine for the nets was high, the price of labor is increasing and the Americans are at least a dollar a hundred nearer the fish market than the Lake Erie fishermen. These conditions were anything but encouraging to the Canadian fishermen and he hoped that everything possible would be done in order to bring such matters before the Government.

President Brown declared that the fishermen of Lake Erie paid more to the Government than all the other fishermen of the Great Lakes combined, amounting to \$45,000 or \$50,000 annually. No fishermen in the world were asked to pay a higher license than that exacted from the Lake Erie fishermen.

The Banquet

The annual banquet scheduled for Thursday night was advanced a night and was held at the Grand Central Hotel on Wednesday evening between 7 and 9 o'clock. Practically all of the delegates sat down to a well prepared chicken dinner, following which Hon. Vice-President A. E. Ponsford, of St. Thomas presided over a brief toast list. Owing to the illustrated lecture billed for the city hall at 9 o'clock, the speeches were limited to five minutes each. They were bright and cheery efforts and for an hour there was a free flow of soul. Mr. Ponsford referred to his connection with the Association and the pleasure it gave him to again preside over a gathering of Lake Erie fishermen. He had heard some talk of the Association abandoning its individuality and declared strongly against such action. In his opinion the organization of the Association had been the best possible agency for the promotion of the interests of the fishermen and he hoped it would continue to use its influence for the welfare of the men on the shore of Lake Erie and the fishing industry generally. It

was through such organizations that the department could work to advantage.

Mayor Brinkman, who was received with applause said he had hoped as chief magistrate to have had the privilege of welcoming the association and had attended at 10 o'clock for that purpose. Unfortunately he understood that differences of opinion in the executive had delayed the session until his other engagements had supervened, but he knew that the city solicitor had done the honors and extended to them the freedom of the city. Continuing, the mayor urged the association to work together and co-operate for the benefit of all. It would be the biggest possible mistake to divide. United they must stand. So far as the city of St. Thomas was concerned, he could assure them that it was ready at any time to assist in furthering the fishing industry.

A. A. Ingram, barrister, St. Thomas, remarked that having been associated with the organization from the beginning, he naturally retained special interest in it and regretted that there should be any desire



MAYOR BRINKMAN of St. Thomas, Ont.
One of the Speakers at the Banquet.

to break it up. The keyword should be co-operation—all working together for joint benefit. The members should think well before anything is done, and if there were wrongs or grievances bring them up and have them remedied. As an association they would get far more consideration, and it would be a great pity of after five years, it should fail of its purpose.

Malcolm McVicar, M.L.A., expressed his pleasure at being privileged to attend and also strongly urged

co-operation and keeping together. If they would only keep cool heads and study why they should not assemble for the twenty-fifth as well as the fifth anniversary.

Ex-Mayor Horton, who was introduced by the chairman as the silver tongued orator of St. Thomas agreed with Mayor Brinkman that the city would always be ready to aid the fishermen. He had been sorry to hear talk of dissension and it could not be expected that agreement would always be found. But the differences should be ironed out, and he counselled co-operation as the keynote. Get close together and stay together and extend the organization to cover the province.

The president, A. S. Brown of Kingsville, briefly thanked Mayor Brinkman for his friendly remarks.

Reeve Cornell, Port Stanley, made the important announcement that the fishermen proposed to hold a regatta on the lake next summer and as a preliminary had appointed the honorary vice-president and chairman, A. E. Ponsford, as "Admiral" of the fleet. Mr. Ponsford had given his services for over four years as well as expressions of good-will towards the association.

The Denizens of the Deep

Following the banquet the delegates adjourned to the council chamber of the city hall, where they listened to an instructive lecture on "Life under water," by Dr. A. G. Huntsman, professor of Biology in the University of Toronto. The lecture was extremely interesting, disclosing as it did, the habits of the fish in their native haunts and a series of excellent slides served to illustrate and illuminate a very instructive talk. In the course of his lecture Dr. Huntsman said:

Life Under Water

To live under water is a very different thing from living in the air. We are so accustomed to the enjoyment of bathing in our lakes and rivers or at the seashore, and even of taking a more or less long dives beneath the surface, that we often fail to remember the fatal consequences—drowning—when we seek to permanently invade the other world that lies beneath an often smooth and glassy surface, and into which we can peer but a short distance at best. Those who have studied the question tell us that water is the ancient mother of the life on this globe, that in it life first appeared, and that from it came the forms that gradually became adapted to the far different conditions on land or in the air.

The sea with its salt water is the original home of all aquatic creatures and many groups are still unable to send any representatives into the dilute fresh water. Consequently the shallow water that borders our great oceans shows a wealth of organisms of the most varied form and colour such as our inland lakes can never hope to rival. The principal denizens of the ocean, the fishes, are, however, well represented in our fresh waters. So characteristic and well known are they that one thing is invariable of fish in connection with waters of any sort. They are eminently adapted for the life they lead and are so out of place in any other environ-

ment that it is an oft used expression—"to behave like a fish out of water. But what is their life like? We sometimes speak of "leading the life of a dog." What would it be to lead the life of a fish? Let no one imagine that we can very successfully answer this question. The life of our closest friend, in spite of daily associations, remains hidden beneath an almost impenetrable veil, which in imagination we sometimes believe we can draw aside. How immensely difficult, to imagine what being a fish can be like!

Water differs very much from air. It buoys the living things up in itself so that the animals do not require the support of strong legs, and the plants do not need stout stems to hold up and display their foliage. Its movements do not have the impetuositities of those of air, and atmospheric storms trouble only its uppermost layers. The extremes of summer and winter are greatly ameliorated when we get shelter behind the slowly heated, slowly cooled mass of the water. The glare of the noonday sun does not penetrate far beneath its glassy surface for the rays of various colours are stopped one after the other and only the blue gets to any considerable depth.

Do fishes sleep. They have so many enemies and are so continuously on the alert whether moving or stationary that on first thought one would be inclined to

believe that they never take such complete rest as sleep implies. It has been found, however, that with certain fishes activity begins about one hour before sunrise and ends about one hour after sunset, which indicates a certain amount of rest at least during the night, although it might be questioned whether they were really asleep, that is unconscious. On a number of occasions fishes have been observed floating at the surface of the water either on their sides or upside down. As their breathing was very slow, and as they did not respond to changes in light or slight disturbances in the water, but did come to life very suddenly and swim vigorously away when they were rudely disturbed it has been concluded that they were really asleep. The common catfish or bull-head has been observed to do this while being kept in an aquarium. In some cases at least this sleep is observed only in the summer and at midday when the sun is hottest. These fish, like some people, are made so drowsy by the warmth that they take an after-dinner nap or siesta. When the fish dies or ceases to balance itself with its fins, it usually turns side or belly up, for its centre of gravity is high up. Some fishes spend so much of their time in this floating position (asleep?) with the belly up, that the latter is darker than the back, reversing the usual condition. Nevertheless, if disturbed, these same fishes turn right side up and swim away quickly.

Among the most interesting questions which we would like to have answered concerning these animals are such as have to do with the senses. Do they feel? Have they pain? How well can they see? Can they hear? Do they taste their food? Can they smell things? It is possible to answer these questions partially at least and for some fishes.

Most fishes do not appear to be very sensitive, if one may judge from the manner in which they take bait shortly after having been badly injured by a baited hook. It has been shown however, that if there is some distinguishing mark above the hook they will soon learn not to take the bait which conceals a hook. So far as momentary reactions are concerned, fish are quite sensitive and are usually driven away with great ease. They are sensitive to touch over most of the surface, although some parts have been proved to be more sensitive than others.

How do they find their food? That varies with the fish. As you know, some snap at any bright thing, and may be taken with the spoon of a troll, as for example the bass, pike, etc. It is evidently sight that guides them and the object must be moving to attract. When they have taken the object into the mouth, they may be seen to spit it out if it is not appropriate as food. This very clearly shows that they can taste. Taste cannot very readily be distinguished from the sensations we get generally from the skin. We can make the distinction ourselves, but we can not be sure how it seems to the fish. It has been found that a dogfish is sensitive over the entire surface of the body to acid, salt and bitter things, but not to sweet things. Whether they affect it as they do us or not we cannot know.

Smelling is very similar to tasting. It differs in that with us the substance smelt must give off something volatile that reaches our nostrils through the air. As fishes live in water they must smell if at all in a different manner. They have nostrils, but these are not connected with the throat and usually have little or no relation to breathing. In three different fishes that have been investigated rather thoroughly, it has been found

that in one, a dog-fish, in breathing the water is drawn through the nostrils, which are connected with the lips; in another the breathing movements work the nostrils so that water is alternately taken in and driven out of them; and in a third, the common catfish, the cavities of the nostrils, of which there is a pair on each side connected by the cavity, are lined by fine hairs, which are constantly in motion, and drive a current of water in the front nostril, through the cavity, and out the back nostril.

It was found that in the dogfish and in the catfish the food was discovered by means of the nostrils alone, for if the nerves going to the nostrils were cut, if the nostrils were plugged with cotton or if they were stitched up so that the water would not go through, the fishes failed to find their food. Evidently they were able to detect their food at some distance by means of their nostrils and this should be called smelling.

Fishes may be led to their food from long distances if we may judge from the results of experiments that have been made. The dogfish is affected by food when two or three feet away from it, whereas it was found to see objects only when they were not more distant than one foot. It was found that on plugging its left nostril it turned to the right when near food, and on plugging the right one, it turned to the left. How this may lead the dogfish to its food can be understood by considering that a stream of particles is coming from the food. The dogfish turns to the right if not smelling as much on the left and vice versa. It is only when the stimulation is equal on the two sides that it will tend to keep a straight course, and such a course would lead it toward the food.

We may at this point mention the fact that in general darkness a bright light from one quarter acts as an attraction to most fishes and the effect is produced through the two eyes in the same way as we have described for smelling. Only when both eyes receive the same amount of light, that is when the fish is headed toward the source of the light, does the fish keep a straight course. Other conditions may act in the same way to determine the movements of fishes. Lack of oxygen repels them while plenty of oxygen attracts them. This fact has been used to explain the spawning movements or migrations of many fishes. Hydrogen sulphide, the gas that makes the odour of rotten eggs so repulsive, and that is formed generally by the decomposition of animal matter, has been found to turn the herring back, even when present in the water in very minute quantities. This fact has been used to explain why that fish has deserted certain of its former spawning grounds, the view being that the proximity of cities polluted the waters and drove away the herring.

There has been much dispute as to whether fishes can or cannot hear. Although with neither outer ear nor drum, they do possess on each side in the back of the head a labyrinth similar to, but less complicated than the labyrinth that forms our internal ear, and in which the sound vibrations affect the sensitive nerve endings and give rise to the sensation of sound. Some experiments to test the hearing of fishes have been negative. But in other cases positive results have been attained. For example it was found that the dogfish was affected by sounds, certain movements were made when a blow was struck on the side of the aquarium. If the nerves going to the labyrinth were cut, it did not react unless the blow were very strong. Also when the ear-bone or otolith, that lies in the part of the labyrinth

where hearing is presumed to take place, was removed, there was no reaction. Also in the squeteague it has been observed that pinning the ear-stone to the side of the labyrinth almost entirely stops the response to sound.

Fishermen are interested in the question whether the fish are driven away by such sounds as those from a motor boat or from guns. Although fish have been shown to hear in some degree at least, experiments prove that sounds originating in the air affect them to only the slightest degree or not at all even when such sounds are of the loudest possible character. To a person under water the sound from a 7 H.P. motor boat is heard only when the boat is within 10 or 12 feet, and the sound is less distinct when there is an underwater discharge of the exhaust. To an observer under water also a gunshot seems no louder than the pop of a soda-water bottle. This is because the surface of the water reflects the sound. A $3\frac{1}{2}$ H.P. motor boat run past a cage in which were several kinds of fishes, did not affect them, for they moved only when the wash of the boat came. The repeated stimulus in the case of the sound of a motor-boat dulls the preception, but when a gunshot is used there is a slight effect on the fish. With a 6 pound howitzer there was no response at 1,000 feet, and only a momentary one at 30 feet.

The labyrinth or internal ear has another function than that of hearing, even in man. It is that of keeping equilibrium. What happens when a person becomes dizzy and fails to keep his equilibrium? That is a sign that the part of the labyrinth that has to do with equilibrium is not working properly. This part has a very curious shape. It consists of three canals in the form of semi-circles and connected each at either end with a common sack. These three canals lie in three different planes at right angles to each other, a horizontal plane, a transverse plane, and a median plane. When movement of the body occurs, the fluid in the canal in the plane of the movement moves, just as the water in a pail moves in the latter when it is whirled. The movement of the fluid affects sensitive nerve endings and the individual is made aware of that motion and if it is a falling one, that is, not a desired one brought about by muscular contractions, he makes the proper actions to stop the falling and correct the motion. Like man, the fish has these semi-circular canals, and it has been found by experiment that removal or destruction of the semi circular canals in a fish makes it unable to keep its equilibrium, although after a short time it regains that power. The explanation of the latter fact is that it learns to use its eyes in keeping in equilibrium, for when blinded after the above operation it loses its equilibrium completely, although an ordinary fish when blinded has not the slightest difficulty in keeping its equilibrium. Another result of the destruction of the labyrinth is a great loss of muscular power. The fish becomes very weak. This also occurs in man.

Having very evident eyes, the fish undoubtedly has

the power of sight to a greater or less degree. As the eyes of the fish are almost invariably on opposite sides of the head and look in opposite directions, it is not possible for it to see things in relief as we do, that is stereoscopically. It is not easy to determine just how much a fish can see. In the investigations that have been carried through, some points have been made clear and by a curious method. Some fishes are more or less brightly coloured, and it has been found that, chamaeleon-like, they are able to change their colour and become like the background on which they may rest. These changes are not only in colour, but also in shade (from light to dark), and in pattern. The best cases we have are from the group of the flat-fishes, of which certain that live along the Atlantic coast have been studied in respect to this matter. They were found to change from white to grey to black, or to yellow, green, blue or pink, all depending upon the character of the background. If the eyes were blinded the change did not occur and if the head were on one shade all the body took that shade no matter what the remainder of the animal rested upon. Also if the bottom on which they rested had a pattern, that pattern was more or less perfectly simulated. The eyes were the avenues through which the stimulus to the change came. We can, therefore, with reason conclude that the fish is not colour-blind and that it can distinguish patterns. It took longer for colour changes than for changes in shade. In the former case the maximum effect might not be reached until several months had elapsed. They could be taught to change quickly, what took five days in one case at the beginning of the series of experiments, being accomplished by the fish in less than two minutes when it became accustomed to being rapidly shifted from one background to another.

Thus by rigid and accurate experiments it has been possible to prove that some of the faculties attributed to fishes by enthusiastic anglers and naturalists are really possessed by these creatures, while others are not. It must always be borne in mind nevertheless, that fishes differ greatly in ability as well as in structure, and that what is found for one species is not necessarily applicable to others.

Professor Huntsman also gave a short account of the results so far attained by Dr. Clemens of the University of Toronto in his study of the herring of Lake Erie. Samples were submitted by members of the Association from different parts of the lake to have it determined whether the small fish taken at the eastern end belong to a different species from the others, or whether they are merely the ordinary kind that has not reached its full growth. The material submitted has not been sufficiently extensive for a final decision in this question, but Dr. Clemens has found that, excluding the large jumbo herring, those at the eastern end show a distinctly slower growth than those at the western end. The growth shown by the eastern fish makes it evidently not worth while to leave them in the water until they reach a larger size.





Group Photograph of the Delegates in attendance at the Fifth Annual Convention at St. Thomas, Ontario, of the Lake Erie Fishermen's Association.

CANADA ON THE SCREEN.

Preceding the business session on Thursday afternoon, the delegates met at the Star Theatre where D. W. Johnson, Director of Publicity in the Department of Trade and Commerce at Ottawa, showed a number of excellent moving picture films showing the evolution of the fish from the spawn and scenes connected with the fishing industry generally. In addition there were several films showing some of Canada's beauty spots. Concerning the work of his department Mr. Johnson said:

"The Exhibits and Publicity Bureau, Trade and Commerce Department, Ottawa, are carrying the people's of the earth to Canada. If they cannot come to Canada, yet will they see it, from the new bureau established by the Trade and Commerce, Department entered into the motion picture world in earnest, and already many thousands of feet of interesting feature films of Canada, scenically and industrially, are working abroad in many countries for Canada. In this way Canada is being brought as she actually is to all the world. Over a year ago this interesting bureau was established and in the same year the first Canadian government-owned film manufactory was introduced. Famous film photographers were employed and during the past season over 10,000 feet of Canadian feature film has been produced. The Trade and Commerce Department has 22 trade agents and trade commissioners located in as many foreign countries. To these officers the feature films are being sent, and through them they are being exhibited in many foreign countries to millions of people.

"Purely educational and yet intensely interesting these films are working and many thousands of feet more will work to attract to Canada from foreign countries capital for legitimate investment, to create an interest in Canada's products, and thereby build up a great foreign trade, and finally by means of the scenic films displaying the wealth of glorious opportunities in Canada for sport, sight-seeing and recreation, to develop a wonderful tourist traffic.

"Mr. B. E. Norrish, civil engineer, a graduate of Queen's University, Kingston, Ontario, is in charge of this new bureau, and it is owing to his indefatigable energy and splendid executive ability that this new enterprise of the government of Canada has reached a point where it can safely be called one of "the greatest boosters" that Canada has abroad.

INVENTORY OF RESOURCES.

"A complete inventory of Canada's natural products, industries and scenic wonders is being made from coast to coast, and according to the relative importance of each subject thus discovered, so will it be immediately filmed. Canada from coast to coast thus will be represented constantly in films that will be shown on the motion picture screens of the world. Some of the exceedingly interesting films that have been produced to date well illustrate the wonderful advertising power of this new method of making Canada known abroad. For example, a recent film takes you to Prince Rupert on the Pacific Coast, and there you see a fishing expedition out in trawlers from this port, and here is illustrated all the different methods of catching salmon, both in the sea and in the waters close to the sea. An educational picture of rare beauty—this will bring home to the world

the wonderful possibilities from a fishing standpoint of this furthest industrial hive—Prince Rupert.

"Again, another film recently taken—the maple sugar films—takes you into the maple woods in the eastern townships of Quebec. Here you see the old and the modern methods of tapping the trees, handling the sap, of boiling into syrup and finally making it into sugar—every step in the process of the sap until you have the finished product—Canada's golden maple syrup. Then you are taken into a factory in Montreal where the maple sugar is made into the bars that you see on the counter and where the maple syrup is bottled. The romance and magic beauty of this, —one of Canada's most appealing industries is shown.

"Again, perhaps the wooden shipbuilding picture recently taken illustrates best of all how minutely the motion picture camera can depict an industry right from the time the natural product is obtained at the place of birth through all the ramifications through which it journeys until finally the finished article is ready for sale. To illustrate the shipbuilding picture takes you into the Vancouver Island forests. Here you see a giant of the forest cut down and see it cut into lengths. Then you journey with one of the lengths down the skidway to the ocean where the log is placed in a boom and then you journey with the boom to the lumber mill where you see the log cut up into a fine squared keel and now you journey with the keel into one of the shipyards of British Columbia and before your eyes the most interesting process takes place. The keel which is the foundation of the ship is laid. Upon it is placed the skeleton or frame of the ship, and now gradually before your eyes you see the ceiling, upper deck and walls of the ship all brought before you most minutely, every detail being shown, and finally with the finished article a beautiful launching takes place and with the interior fittings of the boat placed you have journeyed in picture with the natural product of the Vancouver Island forest until it is a finished article ready to work for Canada. Thus you will observe that every stage in the progress of an industry can be shown.

"Canada as she actually is is being featured by the Exhibits and Publicity Bureau of the Trade and Commerce Department, and this Canada possesses so many different varieties of products with wonderful stories and scenic beauties that for years this bureau can work producing thousands and thousands of feet of film and still not have finished exhibiting Canada as she actually is. At the present time the intention of this bureau for the Summer months is to feature something of every province in Canada, and camera-men are now out in every province getting something of Canada from the standpoint of natural products and scenic beauty. The people of Canada will also have the privilege of seeing these films bi-monthly in the Canadian theatres through the Canadian Universal Film Exchange, who are receiving regularly every two weeks feature pictures as they are produced.

"There is no camouflage about the motion picture camera. It must feature Canada as she is, and Canadians as they see their Canada unfold on the screen before them, have brought home to them strongly the wonderful heritage which they possess in this land of illimitable resources and magic beauty.

After the delegates had gathered at the city hall

for the closing a group photograph was taken, after which the closing session of the convention was opened. Two excellent addresses were given, one by J. J. Harpell, President of the Industrial and Educational Press, publishers of *The Canadian Fisherman* at Ste. Anne de Bellevue, Quebec, and the other by H. Hinrichs, Jr. President Fresh Fish Producers' Association, Erie, Pa.

INTELLECTUAL RESOURCES OF THE FISHING INDUSTRY.

Mr. J. J. Harpell brought to the convention the greetings of the Canadian Fisheries Association. He explained that the President, Mr. A. H. Brittain, had counted on attending the convention but at the last moment was unavoidably prevented from coming. Mr. F. W. Wallace, the Secretary of the Canadian Fisheries Association was also unable to attend as he had to leave for British Columbia about the first of the month to make preparations for the next annual meeting of the Canadian Fisheries Association, which will be held in Vancouver on the 3rd, 4th and 5th of June next.

As soon as Mr. Wallace returns from the west the programme for the Vancouver convention would be announced, as well as the itinerary of the trip to the Pacific coast and all other information of interest to those intending to attend this convention. It is the wish of the association to make this an occasion when those from the east will have an opportunity of seeing western Canada under the most favourable circumstances and with a minimum outlay, and at the same time to get the benefits of the convention, which we hope will be of the greatest importance to the fishing industry of Canada. Many matters of national interest will be thoroughly discussed and resolutions adopted.

The convention in all likelihood will deal with some matters of international interest. There are several problems of common concern to the fishing interests of Canada, United States and Newfoundland and the chances are that by reason of the presence of representatives from the fishing industry in the United States and Newfoundland an expression of opinion may be had on these international questions which will, at least, be a guide for future action of the Government's of these countries.

The speaker pointed out that the resources of every industry—and none the less that of fishing—might be divided into two classes, namely, the material and the intellectual. The material resources are of first importance. If a country does not possess fishing grounds and fish it is impossible to create a fishing industry. Two years ago when it was my privilege to attend your convention I pointed out that from one third to one half of the deep sea fishing resources of the world lie in the closest proximity to the east and west coasts of Canada and that her inland or fresh water fisheries were the greatest in any country in the world.

On this occasion I would like to remind you that great as these material resources are their development will be directly proportionate to the attention that is given to the intellectual resources of those who are to develop them. The reason why Great Britain, with her 45,000,000 and less of population has been able to keep ahead of countries like China with 407,000,000 of people in commercial and industrial matters lies in the fact that she has always given so much attention to her intellectual resources.

It is patent to everybody that the progress of any industry will be proportionate to the brain power of those engaged in it, but it is not so clear even to those who have given it some thought what should be done to best fit the rising generation to carry on and improve upon the methods now employed in your industry. But since our best conclusions are drawn from our experience it is well to look there for the answer.

We find that little progress was made in the mining industry until schools and courses of study were established and these were not established until the industry was organized. Again in the agricultural industry—little or no progress was made in the application of science to the industry, until agricultural colleges and courses of study were established. We also find that the greatest progress in the fishing industry has been made in countries where the most attention has been given to the scientific study of the industry.

Within the last few years the first necessary step was taken in the Canadian fishing industry resulting in the establishment of a national association and several local organizations of which yours was the first to be established and is the most important of the day.

Undoubtedly the next step which the industry should take is the establishment of schools of fisheries and courses of study. This is a work which at present is demanding the greatest attention of the Canadian Fisheries Association. During the next few years we hope to see a beginning made by the establishment of at least two schools of fisheries one in Nova Scotia and one in British Columbia. Concurrent with this move the Canadian Fisheries Association is doing what it can to encourage the librarians of the country to see that the best literature pertaining to the industry is placed in their libraries. The Association is also encouraging the production of literature pertaining to the fishing industry of Canada which literature at present is so conspicuous by its absence.

ADDRESS BY MR. HINRICHS.

Wasteful Methods Condemned.

Mr. Hinrichs, in the course of a brief but striking addresses said that the propagation work being done by scientists could not be too highly valued. Were it not for artificial propagation he believed that commercial fishing would soon cease to be profitable. Natural propagation had done wonderful things but it could not be compared with what could be accomplished by our fishermen if they put forth their utmost efforts. Every effort in work and in a pecuniary way, which the fishermen engaged in would be justified by the results. Much effort and money had already been expended in developing the industry, but what was the use of all this if we ourselves did not give the fish a chance to reach a state where they would be profitable to handle. He contended that the fishermen had been too avaricious, inconsistent and near-sighted for their own good in prosecuting their calling and he believed that the people as a whole had a right to tell the fishermen to look well to the great Canadian industry which belonged to the country as a whole. Our industry is a legitimate one, "said Mr. Hinrichs, "and the people will tolerate some waste but they have a right to tell us that we shall not destroy millions of fish and discard them because they are not marketable value." Continuing he strongly

condemned the wasteful methods that many fishermen had shown while plying their calling. Not all the fishermen, however, were guilty in this respect, for he knew of trap-netters who had voluntarily abstained from catching the small fish and had pulled up their nets. He pointed out that there had been a spirit of cooperation on the north shore in the enactment of laws fixing the minimum size of fish permissible to be caught and he hoped this action would be followed on the south shore. Describing conditions in the New York fish market, he said that there had been an arrangement not to accept any of the small fish in their shipments but through lack of confidence in one another the agreement had not been lived up to. He quoted instances where hundreds of boxes of small fish had found their way onto the market and only fifteen per cent of the small pike and ciscoes had ultimately reached the consumer. Thousands of boxes had been disposed of as fertilizer. How long would our investments be of benefit to us if this sort of taking of immature fish was not stopped. Strict enforcement of laws limiting the size of fish to be caught in his opinion, was the only thing that would put a stop to the wasteful practice and he urged that the Lake Erie Association take up the

formulate new regulations, some of the delegates contending that the onus should be put on the Government in deciding the size of net to be used, while others were in favor of the Association making recommendations.

Officers Elected.

The only changes in the list of officers from that of last year was the election of Hon. S. C. Biggs as Hon. President, and the adding to the executive committee of C. W. Barwell, of Port Dover, and A. Misener, of Port Burwell. The following is a complete list of officers:

Officers, 1919-20.

Hon. President—Hon. S. C. Briggs.
 Hon. Vice President—A. E. Ponsford, St. Thomas.
 President—A. S. Brown, Kingsville.
 Vice-President—A. E. Crewe, Merlin.
 Secretary-Treasurer—H. A. Short, Port Stanley.
 Executive Committee—A. E. Crewe, Merlin; H. Dromgole, Rodney; W. Goodechild, Amherstburg; J. E. Pastorius, Kingsville; W. D. Bates, Ridgetown; H.



matter and see that similar laws to those being passed in the States were enacted in Canada.

Department Wants Suggestions.

The following telegram from the Department of Fisheries was read and created some discussion: "The Department would appreciate any suggestions that the Association in convention may submit for consideration, regarding size of gill net mesh for taking of herring in eastern portion of Lake Erie: Also should size of mesh in pound-net pots be regulated. If so size recommended to comply with existing regulations."

In the discussion that followed the reading of the telegram the consensus of opinion appeared to be in favor of the three inch mesh and a resolution was adopted recommending that until new regulations along these lines were adopted, the old regulations should be rigidly enforced. Some discussion also took place over the suggestion by one of the delegates that the Government be asked for a commission to come up and investigate the whole problem and

Goodison, Cedar Springs; Ed. Keohler, Wallacetown; W. F. Kolbe, Port Dover; B. Westcott, Kingsville; H. Hales, Dutton; A. B. Hoover, Nanticoke; Capt. Robinson, Port Dover; J. Harris, Point Pelee; A. S. Brown, Kingsville; E. Moss, Port Maitland; Geo. VanOrder, Port Burwell; W. H. McPherson, Port Stanley; N. S. Cornell, Port Stanley; B. Clay, Wallacetown; E. Olmstead, Wheatley; Milton Campbell, Leamington; N. McAuley, Erieau; C. W. Barwell, Port Dover; A. Misener, Port Burwell.

A dollar was a dollar once,
 But it has since turned fickle;
 A dollar was a dollar once,
 Today it's worth a nickle.

"Eyes tested while you wait," a sign read in a downtown window. The other day a man stood in front of the optometrist's window and was heard to say: "I don't know what to do—whether to have them tested while I wait or leave them here and call for them later."



NOTES GATHERED IN THE GILL NET AT THE CONVENTION.

A rugged, outstanding figure at the convention, was Captain Robinson of Port Dover, at one time commander of the Canadian cruiser *Vigalante*, and now a partner with Mr. Barwell in the fish business at Port Dover. Pacing the quarter-deck—or rather the rotunda of the Grand Central Hotel, the gallant captain passed the word of good cheer to his many friends and some of his cronies were favoured with some of his choice yarns. An epoch in the captain's career is expected to take place in the spring, when his new oil-engined craft takes the water at the Port. Good progress has been made with the boat. The engine has already been delivered and will shortly be installed.

tion and his personality dominated the gathering like a sustained ray of sunshine.

Captain Post, president of the Post Fishing Company of Sandusky, Ohio, was a delegate at the convention. Captain Post comes of a family of fishermen and he himself went to sea in the early days of his career. His uncle came out to Lake Ontario and put in the first pound net in those waters in 1854. Despite his gray hairs, Capt. Post is still young in spirit and he is a vertical mine of information on the fishing industry both in Canada and along the U.S. shores of the Great Lakes.

F. T. James' presence was greatly missed at the convention. He sent a telegram of regret from Toronto, stating that ravages of the "flue" amongst the mem-



Hon. Vice-President A. E. Ponsford of St. Thomas, was on hand early in the proceedings to welcome the delegates with a genial hand-shake. Mr. Ponsford's hospitality last year when he capably fulfilled the role of host on retiring from the presidency, was not forgotten and many reminiscences concerning it were indulged in by the delegates.

About the busiest man at the convention was H. A. Short, of Port Stanley, the capable and energetic secretary-treasurer of the Association. The burden of the work connected with the gathering naturally fell on the secretary, and it was cheerfully and energetically performed by Mr. Short.

Throughout the various sessions, or wherever the fishermen gathered, the cheery personality of President A. S. Brown of Kingsville was always in evidence. The president combines a genial disposition with keen business acumen in controlling the affairs of the Associa-

tion and his personality dominated the gathering like a sustained ray of sunshine.

A. W. Pini, of the National Fish Company, of New York, and one of the best known men in the fish industry, both in Canada and across the line, was one of the delegates.

Many friends were pleased to greet Daniel Leitch, of the Booth Fish Company of Ridgeway.

One of the best speeches given at the convention was that by C. W. Barwell of Port Dover on Wednesday afternoon, in urging fairer treatment by the Government in the matter of licenses and the distasteful government control of the fish industry. Mr. Barwell does not speak of ten, but when he does his remarks are always well delivered and to the point.

The big man, physically, of the convention, was George Ban-Order of Port Butwell, whose huge and genial bulk loomed large wherever he happened to be.

SOME RESOLUTIONS.

The following are the resolutions adopted by the Lake Erie Fishermen's Association convention during its sessions in St. Thomas:

Moved by A. S. Brown, seconded by N. S. Cornell:

WHEREAS the policy of Government operation in the commercial fisheries of the Province of Ontario is productive of unfair competition with private interests in that industry and

WHEREAS there has been no adequate justification for the singling out of the fisheries for such government competitive operation and

WHEREAS the only reason advanced for such interference was that of a necessary war measure, which reason no longer exists and

WHEREAS the national necessity of the present day is for increased production of the country's national resources for export which will reduce the adverse balance of trade and thereby enable the citizens to buy necessities such as coal, seed corn, etc., on more favorable terms.



A. S. BROWN, of Kingsville,
Re-elected President of the Lake Erie Fishermen's
Association.

BE IT THEREFORE RESOLVED that the present Government be respectfully asked to cease commercial fishing and dealing in fish.

Moved by John Harris, seconded by A. B. Hoover:

That the Government requested to make no change in the law relating to the taking of sturgeon.

That, inasmuch as the American fishermen take, sell and dispose of Black Bass to the authorities of the State of Ohio for stocking inland lakes, the Canadian fishermen be allowed to take and dispose of Black Bass until such time as these conditions are changed in Ohio.

Moved by Capt. Robinson, seconded by W. H. Mc-

Pherson: That this Association take proceedings to bring before the Minister of Public Works the necessity of segregating the Fisheries from the Game Department and appointing a Deputy Minister to administer each department.

Moved by N. S. Cornell, seconded by W. Goodchild: That this Association hold a Regatta at Port Stanley on July 1st and 2nd, and that the following be a Committee of Management: W. H. McPherson, H. Dromgole, Capt. Robinson, A. E. Crewe, F. Coll, E. Koehler, N. McLean, N. McAulay, J. E. Pastorius, J. Harris, H. Hales, G. Van Order, B. G. Westcott, G. Liddle, J. Grubb, W. Goodchild, A. E. Ponsford, B. Clay.

Moved by N. S. Cornell, seconded by W. Kolbe: That Capt. Robinson be chairman of the Regatta Committee.

Moved by N. S. Cornell, seconded by A. B. Hoover: That Regatta Committee of Management be composed of G. Van Order, W. H. McPherson, B. Clay, H. Hales with power to act.

Moved by N. S. Cornell, seconded by J. E. Pastorius: That our Hon. Vice President, A. E. Ponsford, be requested to act as Admiral of the Fleet during the Regatta.

Moved by E. Koehler, seconded by W. H. McPherson: That the Secretary acknowledge receipt of the letter of the London Free Press and express the thanks of the Association for their offer of a Trophy for Tug race to be held at the Regatta on July 1st and 2nd.

Moved by N. S. Cornell, seconded by W. Goodchild: That the Provincial Government be asked for the usual Annual Grant of \$500.

Moved by N. S. Cornell, seconded by H. Hales: That the Association invite the fishermen of all fresh water lakes to become members of this Association.

Moved by N. S. Cornell, seconded by R. E. Menzie: That the Provincial Government be requested to have spawn gathering apparatus at the different ports early in the season each year.

Moved by H. Hales, seconded by W. Maguire:

Whereas the fish producers along the Erie shore, both east and west of St. Thomas, have been greatly handicapped by unsatisfactory transportation facilities, which is detrimental to the financial interests of the producers and is liable to destroy present markets because of deterioration of fish in transit.

Be it resolved that the Federal Government and the Canadian Railway Board be asked to provide adequate accommodation for shipments of fish and to introduce same before the opening of the season.

Moved by H. A. Short, seconded by W. H. McPherson: That the Provincial and Federal Governments be requested to appoint a Commission, to be composed of men, who are not in any way interested with the fisheries on this lake, to visit the different ports, study conditions, methods of fishing, and existing regulations governing licenses and to frame up, from their investigations, new regulations which they may consider should govern all licenses and that, until such Commission is appointed or until such time as the Commission frame the new regulations, all existing regulations be strictly enforced.



1.—H.R.H. the Prince of Wales
at the Nipigon Lodge Sept 1919
2.—Virgin Falls.
3.—The Royal Party on the
Launch "Arrow."
4.—Mr. A. S. Brown (winner)
Kingsville, Ontario.

WINNING THE NIPIGON "SHIELD"

THE NIPIGON WATERS have long been famed as the favorite haunt of speckled trout, but for a novice who has never spent more than a few hours in hook and line fishing, to land the prize trout of the season is quite unheard of. Yet that is precisely what was done last season by Mr. A. S. Brown, of Kingsville, Ont., who has been pronounced the winner of the Nipigon Trophy, which is annually awarded by Canadian National Railways to the angler catching the largest trout of the season in accordance with the conditions of the competition.

Competitors must be non residents. The fish shall be a true speckled trout, not a lake or gray trout. It must be caught in Nipigon waters during the lawful season, and by rod and line, with either a fly or a single hook with bait. A regular affidavit as to the catch, or an exact copy thereof, shall be used in filing entry, signed by the angler, together with the certification of two or more persons, who shall thereby vouch for the facts of the entry.

This affidavit is to be filed with the Manager of Nipigon Lodge within two weeks, or with the Manager of Canadian National Hotels, Toronto, within one month of the catch.

Mr. Brown, the winner in 1919, is President and Manager of the Northern Fish Company, and also President of the Lake Erie Fishermen's Association. To quote his own words, he says: "While my business is commercial fishing, I do not hesitate to say that a very few hours at the most is all the time I have ever spent in hook and line fishing; so it goes to show that a novice is as likely to catch a prize trout, where fishing is good, as is the old and seasoned."

Mr. Brown's party, which included Mrs. Brown, Mr. and Mrs. Wade and Miss Helen Wade, of Detroit, arrived at Nipigon Lodge on July 25th and spent the following ten days at the Lodge, making frequent trips to Virgin Falls in the launch Arrow, which is operated from the Lodge by Mr. Neil McDougall. On August 6th, at Virgin Falls, Mr. Brown made the big catch which won him his trophy, using a 6 oz. rod, Shakespeare reel, 25 yd. oiled line, fly hook, Colorado spinner and no bait. It was a fine specimen, 24½ inches long, 14¼ inches in girth and weighing 6¼ pounds.

Of Nipigon District, Mr. Brown says: "It is a most beautiful spot and well worth the time spent there, even though we had never caught a fish. We spent many pleasant hours rowing and canoeing along the shores of Orient Bay and up a little stream which winds in and out among the high rocks, and if you go up far enough you will find that it starts from practically from nowhere between two high walls of rock. Along the shore of this stream, in the evening, we saw as many as five and six fine moose. They seemed little disturbed at seeing us, and as long as we made no noise they were in no hurry to leave. We are all looking forward to another trip to Nipigon Lodge, at Orient Bay, and hope to meet our old friend, Neil McDougall."

Mr. Hendrick Hudson, of Syosset, N.Y., also made a fine catch at Virgin Falls and ran Mr. Brown a close race for the Trophy. His trout was 24 inches in length, 14½ inches in girth, and weighed 6½ pounds, but he used a coccatouche bait, which, in the opinion of expert fishermen, takes less skill to handle than a fly spinner. Otherwise the honors would have had to be divided.

Mr. W. G. H. Browne, of Toronto, was another lucky fisherman, his trout weighing 6½ pounds and being 23¾ inches long and 16 inches in girth, but the date of the catch, which was September 16th, put him out of the running for the trophy.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Manager, Industrial & Educational Press, Ltd., 507 Board of Trade Building, Vancouver, B.C., Canada

BRITISH COLUMBIA FISHERMAN'S PROTECTIVE ASSOCIATION

The Fraser River Fisherman's Protective Association at a well attended meeting during January voted unanimously to change the name of the Association to the British Columbia Fisherman's Protective Association, thus materially broadening the scope of the organization.

The following officers were elected: President, Thomas Weidman; Vice-President, John Insley; Secretary-Treasurer, —To be appointed later. Executive: Leonard Peterson; John Broderick; James Plester, New Westminster; Harry Wright, Alberni; George Browse; Arthur Gabriel, Langley Fort; J. Muench, Port Hammond; Jack Reid, New Westminster; R. Nelson, Ladner.

The President was authorized to take steps towards affiliation with the Trades and Labor Congress of Canada. An active membership committee was formed and the initiation fee was made \$1.00 and monthly dues 25c.

The general feeling prevailed at the meeting that the aim of the organization should be a spirit of co-operation with the officials of the fisheries department, the Japanese fishermen, and the cannery with the idea of furthering the general interest of the fishing industry of the Province.

PRINCE RUPERT TO HAVE NEW DOCK ERECTED BY THE GRAND TRUNK PACIFIC.

The Grand Trunk Pacific Railway have completed plans for an extension of the present dock at Prince Rupert. The dock will be 860 feet long and 173 feet wide. It will be equipped with tracks, travelling crane, two elevators and all modern equipment. There will also be erected at the dock a two-storey shed 820 feet long with a capacity of 25,000 tons. This new extension places Prince Rupert in a position to handle a large quantity of ocean tonnage.

It is understood from later reports that the new dock will have special facilities for the handling of canned salmon.

V. J. JOHNCOX IN FISH OIL OPERATIONS.

Mr. Victor F. Johncox, formerly proprietor of the London Fish Company of Vancouver, has purchased the Fish Oil and Meal Manufacturing Plant formerly operated by J. Jardine at Rendezvous Island.

Operations are being carried on at the present time and enlargements to this plant will be made at an early date.

EX-EMPLOYEES OF DEFIANCE PACKING COMPANY WANT BACK WAGES

Ex-employees of the Defiance Packing Co. have applied to the court to have the amount of their claims settled, and an order made for immediate settlement.

Liquidation of the affairs of the Company commenced April 17, 1919. At that time it is claimed there were 9000 cases of empty cans among the liquid assets of the Company. It is claimed these cans could have been disposed of and the wage claims paid. The creditors however, decided to allow the debenture holders to carry on fishing operations during the past season, and meantime the ex-employees have been kept waiting.

Defence is that it is not certain that the claimants can demand immediate payment in view of the arrangement to carry on the business for the benefit of all the creditors, and cited the case of the Dominion Trust Company clerks who had to wait under similar conditions.

The court reserved decision.

HAVE YOU ADVERTISED THAT CASE OF CANNED FISH

F. E. Payson, Secretary Vancouver Branch Canadian Fisheries Association.

Hotels, restaurants, boarding houses, ranch owners and others who buy in quantity will **SAVE MONEY** when they buy A CASE OF CANNED FISH.

Mr. Wholesaler, when the retailer buys the next lot of canned fish, just ask him if he has advertised **CANNED FISH BY THE CASE**. Explain how he can make money by selling in quantity. This will help your sales too. It is certainly worth talking about, and now is the time to do it.

Memorandum Respecting Salmon Fishery Regulations for the Province of British Columbia

(By Hon. William Sloan, Fisheries Commissioner for Province.)

The question of conserving the supply of salmon in our waters has long been one of keen interest. The 1905-07 Dominion Fisheries Commission after a long investigation, recommended that "effective measures for securing some limitation of the exploitation of the northern waters of British Columbia be adopted." Acting on that report the Minister at Ottawa in 1908 set forth that no additional canneries would be licensed and that the number of boats in each section would be limited. The Dominion-Provincial Boat Racing Commission of 1910 reported against any increase in canneries or boats, and no increase was made until 1912, when an additional cannery licence was granted on the understanding that only white labour would be employed in operating the plant and in catching the fish; an understanding that was never carried out. Further cannery licences were granted in 1913, 1916, 1917, and 1918. There are now some ten more salmon-canneries in the North than there were in 1908, and many more gill and purse nets, and the deadly drag-seines are being operated, and traps have been installed in some localities. In 1917 the Dominion Commission, following hearings held throughout the North, reported that in their judgment "neither the ambitions of an individual nor the business strategy of a company is in itself sufficient ground for a change of public policy, and we do not regard the general result of the Department's change in policy which began in 1912 as having improved the situation from the public point of view, and we believe that the removal of all restrictions under the present conditions as to supply of salmon, would only open the way towards inefficiency and loss."

It should be the first policy of the Government to prevent depletion to ensure continuance, and at the same time to eliminate useless competition and excessive overhead charges. The policy suggested by me is a move in that direction. If adopted it will conserve the supply and increase the earnings of the individual fishermen. There is abundant evidence that the salmon of the North and of Vancouver Island are rapidly being depleted. Unless they are given far more protection than is now afforded them they will go the way of the salmon of the Fraser. There is no doubt of that. The Fraser was once the greatest salmon river of the world. The vast schools of salmon that used to seek its waters annually have been fished out. (See statement made to the American-Canadian Fisheries Commission, pages 53 and 54, British Columbia Fisheries Report, 1918; copy attached—Exhibit 1.) As a salmon-stream it is now in the third or fourth place in the salmon stream of this Province. There has been no limitation placed on the fisheries of the Fraser, except a modest weekly closed period. They have been open to all that wished to engage. There are thirty-two canneries on the Fraser, but twelve of which have opened their doors this year, and combined they packed but 34,000 cases of sock-eye salmon, and in almost every case they operated at a loss.

At the present time the canning plants on the

Skeena and Nass Rivers and Rivers Inlet could have this year put up the entire pack in less than twelve days of eight hours each, whereas they were operated for over sixty-five days. Fixed charges were needlessly heavy because of the numerous plants, and have resulted in such high prices as to seriously affect the public interest. A further increase in the number of plants and the amount of gear employed on those waters will not better conditions.

I believe that the withdrawing of restrictions in the fishing regulations, as proposed, will most certainly have a disastrous effect upon the runs unless at the time of amendment most drastic additions are made to the present weekly and annual closed seasons. If the fishing is to be thrown open to all-comers, it will result in placing on the fishing-grounds of the North and Vancouver Island the now unused Fraser River fleet of fishing boats. Depletion will surely result unless the present weekly close season of forty hours is extended to at least seventy-one hours, and to a further and material restriction of the present commercial fishing areas. To provide such an extension of closed hours will make it extremely difficult for fishermen to earn a weekly living wage without such a material increase in the price paid for fish as will add greatly to the cost of the product.

I suggest that the time has come for a complete and radical change in the policy of handling our fisheries. It is time that the Government stepped in to seriously protect the fish, eliminate all useless competition, over-equipment and waste to the end that the people may be able to obtain at a fair price one of the natural food products of this Province. To permit a further depletion of the salmon-fisheries of the Province would be a "policy which could only be characterized as a criminal policy." The fish of this Province notwithstanding the depletion of both the salmon and the halibut, are still one of its greatest food assets. They are one of the greatest assets the Province possesses. With judicious handling the fisheries can be maintained for all time. The depleted fisheries can be built up, built up, but they cannot be maintained if the present methods are to continue. The Fraser River fishery demonstrates what will happen if things are to go on as they have been going.

We have overdone the thing. We have drawn, and are drawing, too heavily upon our supply of salmon and of halibut. (See attached excerpt from House of Commons Debates, January 19th, 1907, page 1722—Exhibit 2.) What we need is a complete and radical change of policy; a departure altogether different from past and existing methods. The time has come when the Government should step in and take over our salmon-fisheries and administer them for the benefit of the people as a whole and for all time. They should step in and take over the salmon-fisheries just as the British and United States Governments have taken over the fur-seal fisheries of the North Pacific. Instead of licensing existing and new companies and individuals to take and handle our salmon-fisheries the Government should take them over and handle

them. By so doing the fish will be given full protection. There will be a radical reduction in equipment and a consequent reduction in overhead expenses that will materially reduce the retail price of both fresh and canned salmon. And at the same time the Government, being serious in its desire to help returned men, can do so by taking control of the salmon fisheries and install returned men to operate them.

The Governments of Great Britain and the United States took over the fur seal industry because it was essential to the preservation of the fur-seal. (See excerpt from Hansard, February 27th, 1908, page 3954, attached—Exhibit 3.) The fur-seal was threatened with extinction. Corporate and individual enterprise was killing them off. The Governments took them out of the hands of corporations and individuals and adopted a policy that has materially increased the numbers in the herds of fur-seals.

There is no inherent difficulty in taking over the salmon fisheries. The existing operating companies in the salmon fisheries have no operating rights beyond those granted them from year to year. The Government is under no obligations to renew the licences formerly granted to them. I suggest that the Government should assume the sole control of the entire salmon industry, even though that may mean compensation where it can be shown that compensation is due.

Many of the salmon plants on the Fraser are at present a liability and not an asset of the owning companies. The plants of Northern British Columbia will in a short period be as valueless as the plants on the Fraser if the existing policy of depletion is continued. The history of the Fraser will be repeated. The salmon fisheries of British Columbia will be depleted as Alaska is being depleted. (See attached statement of Charles D. Garfield, Alaska Fish Commissioner, Fishing Gazette, New York, December, 1919, page 28—Exhibit 4.) The Government should bear this in mind in taking over existing plants that may be found necessary for the work under Government control. The Government can, by combining its efforts, reduce overhead expenses by several hundred per cent. It can in consequence sell cheaper. It can put up as good, if not a better and more uniform pack. Being a Government-guaranteed product, it will be in greater foreign demand. And what is of greater importance, it will ensure the continuance of the salmon runs.

Government owned and operated fisheries, and I do not confine the suggestion that Government ownership be confined to the salmon-fisheries alone, for I would include trawl-caught fish, which together with the salmon would prove a valuable adjunct to the two transcontinental railways-lines owned and operated by the Government. (See report of Select Committee appointed to deal with schemes and suggestions made with a view of rehabilitating soldiers. Journals of British Columbia Legislature, pages 1724, 1919; copy attached—Exhibit 5.) By the addition of large freezing and cold-storage plants at or near Prince Rupert and Vancouver, the Pacific terminal ports of Government-owned railway lines, the Government will be in a position to supply the North-west Provinces and Eastern Canada with fish at cheap prices, employ returned men, and to dominate the local fish-food markets, to the immediate and lasting benefit of the fish and the people.

The fish of the Province belong to the people of Canada. They constitute one of their natural assets.

When our minerals and our timbers are drawn upon they are lessened to that extent. Minerals cannot be replaced. Our forests may, at great expense, be restored by reforestation, but they then will not be available for several generations. Our fisheries, on the other hand, will last for all time if they are properly handled. Depleted runs can be restored. The runs of former years may even be enlarged. All that is necessary to maintain our salmon-supply is to ensure that a sufficient number of fish reach the spawning-grounds. If the beds are well seeded there will be a certain return. The fish will do all the work necessary, provided the Government gives them a chance to do so. They will perpetuate themselves without cost. They will entirely disappear if left to corporate and individual control.

The policy here advocated will meet with the approval of the people of Canada, since it means that the fisheries will be maintained in their interest, and that they may have fish at a cheaper price.

The policy proposed is a practical and sane business thing for the Government to undertake. It is a business that will pay dividends in a greater supply of fish, and at a cheaper price, not only to the people of today, but to our people that are to come after. Government control and operation is, in my opinion, the solution of this great economic question.

The Privy Council decided that the right to administer the fisheries of this Province rested with the Dominion, and that the right to fish was a public right subject to regulation by the Dominion. Provided the Dominion Government is not prepared to accept the policy here advocated, and operating our fisheries, I maintain that the Dominion should surrender that right to British Columbia.

We are facing rapidly changing conditions, and the time is opportune to assure the conservation of the Pacific Coast fisheries for the present and the future benefit of the whole people of Canada rather than sacrifice this great Provincial and national asset to satisfy the shortsighted greed of a small minority.

Victoria, B. C., December 29th, 1919.

(EXHIBIT 1.)

Statement submitted to the American-Canadian Fisheries Commission by the Hon. William Sloan, Commissioner of Fisheries, at the Vancouver Meeting, 1918.

Gentlemen of the Commission,—As the Commissioner of Fisheries for the Province of British Columbia, I desire to comment briefly on the present precarious condition of the sockeye-salmon fishery of the Fraser River. The watershed of that river and its channels lie wholly within the Province. From its watershed have come all but a fraction of the sockeye that have been taken in the waters contiguous to the International Boundary-line which separates the Province of British Columbia and the State of Washington. From that watershed must continue to come the seaward migrants of sockeye which produce the commercial runs of sockeye to those waters, because there is no other watershed tributary to those which affords sufficient spawning and rearing waters for sockeye salmon. The vast runs of former big years demonstrates the extent and the value of the runs that that watershed can produce. It is the greatest sockeye-producing watershed known. No other watershed has produced such vast numbers of sockeye. That watershed is to-day as capable as ever of producing the vast run of the past. It has not been contaminated.

Settlement, power, and irrigation have not injured it in any way. It needs only to be protected to produce the great runs of the past. Its produce has been lessened—almost destroyed—because a sufficient number of spawning sockeye has not been permitted to reach it. The runs in the three last years have steadily decreased because too few of the adult salmon have escaped capture in Dominion and State waters; because of excessive fishing too many have been captured. The run of the big year was further destroyed by a rock-slide blocking the river-channel at Hell's Gate in 1913.

That the runs in the three last years have been almost wiped out by commercial fishing and that the run in the big year has been alarmingly decreased has been ably demonstrated by statements already submitted to you. It is unnecessary here to more than call your attention to the evidence of depletion already in your hands. I do, however, accentuate the fact that the evidence submitted to you by our Department is founded upon scientifically ascertained facts. The watershed of the Fraser and the fishing areas supplied by it have been under close scrutiny since 1901. No other has been so carefully observed. The history of the race of sockeye that frequent the Fraser is better known than that of any other district. The facts are no longer questioned. **The run of sockeye to the Fraser is perilously near to extermination. They will be exterminated if conditions remain as they are, and in so short a period as to wipe out all interests of both fishermen and canners.** In view of the evidence there is, in my judgment, but one thing to do. Adopt measures that will ensure to the watershed all the sockeye that still survive. To that end I would suggest that the total prohibition of sockeye-fishing in the waters frequented by those produced in the Fraser River until such time as they have recovered from their depleted condition. I suggest this though it does involve compensation to resident fishermen and canners who can establish that they are entitled to compensation by their respective Governments. It is fruitless to rely upon concurrent regulations in British Columbia and the State of Washington waters. That has been tried and failed. Such efforts will continue to fail. Present commercial and monetary considerations must be eliminated. It must be in an international way, because it is an international question. It is one of the greatest fishery questions in which Canada and the United States are now concerned. The only adequate, the only permanent solution of this question, I submit, is the acquisition by Canada and the United States of all the rights in this fishery of which they may not be in possession. That being established, the waters should be closed to sockeye-fishing for such a period of time as is necessary to restore the runs to the abundance of former big years. When that has been accomplished, let fishing be resumed under supervision and for the benefit of the two nations until such time as they have been recouped for their expenditures, and thereafter in such manner and to the end that the supply may not again become depleted.

I submit, gentlemen, that the Government of Canada and the United States recognize that the conditions concerning them demand such treatment. There is no gainsaying the evidence. The watershed of the Fraser River will, when adequately protected, produce more sockeye salmon than any known watershed. It produced in 1913, 2,300,000 cases. In the three following lean years it produced an average of but 267,

000 cases per year. Being in possession of a watershed capable of producing 2,300,000 cases a year, can any Government be content with conditions by which but 267,000 cases are produced, and the continuance of which will entirely destroy any production whatever? The evidence in the case is conclusive—it is undisputed; the fishery is in a precarious condition. There is, however, a difference of opinion as to the remedies to be applied. I submit that those best qualified to speak have made it plain that no temporary measures will produce desired results. The races of sockeye that frequent the Fraser cannot be restored by any half-way measure. To allow the destruction of the sockeye-fisheries of the Fraser River would be an unnatural, immoral, and unpatriotic policy.

The questions here involved are similar to those in the fur-seal case. They are international in character, and not Provincial or State questions, and must be dealt with upon broad national lines and in the interests of the people of Canada and the United States.

Faithfully yours,

WM. SLOAN.

Commissioner of Fisheries for British Columbia.

Note.—Since the above representations were made we have had two seasons' fishing on the Fraser River and results have shown the decline in pack to be even more serious than predicted. The run of 1918 produced but 70,000 cases and that of 1919 will not be greater.

(EXHIBIT 2.)

House of Commons Debates, Mr. Sloan, Comox-Atlin.

(Hansard, January 18th, 1907, page 1722.)

"Dixon's Entrance, more especially that portion to the south of the line of approaching Graham Island, is the most valuable halibut-fishery ground which we have, is being daily invaded by American fishermen, and unless prompt measures are taken to effectively patrol these waters the constant in roads will seriously deplete this very valuable territory. **The halibut-fishing in Dixon's Entrance is carried on without regard to the spawning season or the observance of conditions necessary to a continuous supply, and it is being urged that regulations be enacted and enforced with a view to prolonging and maintaining unimpaired the present commercial value of these very important fisheries.**"

Note.—No special consideration was given to this warning at that time, with the result that Dixon's Entrance is now valueless, being completely denuded of halibut. The halibut-catch of 1918 was 14,000,000 lb. less than of 1917, and not a pound of the 1918 catch was caught in Dixon's Entrance.

(EXHIBIT 3.)

House of Commons Debates, Mr. Sloan, Comox-Atlin.

(Hansard, February 27th, 1908, page 3957.)

"I have shown the value to the world of the fur-seal fisheries of the North Pacific Ocean.

"I have pointed out the urgency of action being taken to save this valuable animal from total extinction.

"I have suggested the Hague Tribunal as competent and unbiased to deal with this question.

"In conclusion, Mr. Sneaker, the destruction of the fur-seal species would be unwarranted; furthermore, it would be an unnatural, immoral and unpatriotic policy.

"The protection and conservation of the fur-seals of the North Pacific Ocean is an obligation due posterity by the nations of to-day, who are directly responsible and directly interested.

"This question is not one that can be settled on lines of selfish consideration. It can only be settled by compromise and generous broad patriotic statesmanship."

Note.—This long-outstanding and contentious question was finally adjusted without reference to the Hague Tribunal, and mainly along lines indicated at that time, and with most satisfactory results to the preservation of the fur-seals.

(EXHIBIT 4.)

Excerpt from the Fishing Gazette, New York, December, 1919, page 28.

"Charles D. Garfield, Alaska Fish Commissioner, recently told cannerymen that the fishing industry in the territory would be **completely demoralized within a very few years unless drastic restrictions are immediately placed in effect to allow sufficient fish to escape to the spawning-streams.** Mr. Garfield's address was given at a hearing conducted in the assembly room of the Seattle Chamber of Commerce by the Department of Commerce on proposed legislative measures designed, to exclude fishing in all of the streams and lakes of Alaska and in waters and in waters tributary to their mouths.

"For the last fifteen years the Government has been endeavouring to replenish the supply by building hatcheries and distributing salmon fry. So far not a single instance has been recorded where these fish return to propagate in the waters in which they were released, and the fact seems well established that the efforts of the Government have proved a failure.

"It took 100,000,000 salmon to complete the packs of Alaska's 135 canneries during the years 1917 and 1918. **Within a few years these institutions will for the most part be scrapped and the industry ruined unless strict protective measures are adopted.**"

(EXHIBIT 5.)

Nos. 32 and 33.

Votes and Proceedings of the Legislative Assembly of British Columbia.

Friday, 14th March, 1919.

Mr. McGeer presented an interim report from the Select Committee appointed under Resolutions of the 20th and 24th days of February, 1919, to deal with schemes and suggestions made with a view to rehabilitating soldiers, as follows:—

Mr. Speaker:

Your Select Committee was attended by Deputy Commissioner of Fisheries Babcock; and upon hearing Mr. Babcock and upon making further investigation, your Select Committee is of the opinion that in formulating measures for the rehabilitating of soldiers full consideration should be given to the fisheries, for two main reasons, the first being that your Committee believes that the fishing industry if properly developed, would provide employment for a large number of returned men, and the second was that by the proper development of that industry the high cost of living problem would be solved in a measure in at least one of its many phases. While your Committee made some investigation into the possibilities of the returned soldier engaging in what is known as the

"salmon-fishing industry" in such places as the Fraser River and elsewhere, your Committee is not of the opinion in view of the condition of that industry, that it presents the best possibilities for the successful employment of returned men, the reason for such conclusion being that it is the opinion of your Committee that a policy of conservation is at once necessary to re-establish that industry so that it may be made one of profitable possibilities for those engaging in it. For instance, your Committee ascertained the fact that in 1918 the total catch of sockeye salmon in the Fraser River was 75,000 cases, as compared with 553,000 cases which were captured in 1914, the brood-year of the 1918 run. **It is the opinion of your Committee that similar depletions are being made on the Nass River, Rivers Inlet, and most of the minor sockeye waters.**

Your Committee also ascertained that in connection with the halibut-fishing carried on on this Coast the 1918 catch shows a decrease of 14,000,000 lb. Your Committee, in view of the provisions of the "British North America Act" and subsequent legal interpretation of that Act, making it obligatory that the Dominion Government assume the full protection and encouragement of the fisheries of this Province, and in view of the fact that a direct revenue during the past ten years has been collected by the Dominion Government of between \$45,000 and \$50,000 a year, and under the new provisions as provided in the regulations recently issued by the Dominion Government that revenue is to be increased to \$250,000 a year, deems it advisable that the Government of the Province of British Columbia should recommend to the Dominion Government in definite terms the necessity of developing the fishing industry in the Province of British Columbia along lines which will **mean the engaging of large numbers of returned men, and at the same time amply protect that industry from depletion and ultimate destruction.**

With reference to deep-sea fishing, your Committee ascertained that deep-sea trawling had been conducted out of the ports of British Columbia in 1917 and 1918 on a profitable basis, and that the operations afforded evidence of an ample wealth of food-fish to provide the possibilities of the development of an industry as yet practically unexploited. The extent of possible profitable employment in such an industry is evidenced by the facts shown by the operation of a trawler known as the "James Carruthers." This trawler was operated out of Prince Rupert in 1918, and made a total of forty-nine trips, making in all 151 days. The approximate catch was 2,000,000 lb. consisting of flounders, sole, witch, brill, and other fish. The amount which each fisherman received for the season's work was approximately \$2,000 during the operation of the boat. It is understood that the boat was inactive for a period of six weeks owing to the fact that **no cold-storage facilities were available to handle the catch.**

Your Committee also found that a considerable amount of training is necessary before a man should engage in this particular occupation, and that more vessels of a suitable type would be necessary.

In the light of the above facts, your Committee humbly recommends that the Government of the Province of British Columbia urge upon the Dominion Government the establishment on the Pacific Coast of a trawling school for the training of men to engage in deep-sea trawl-fishing by providing a number of suitable vessels equipped for deep-sea fishing officered

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by experienced navigators, engineers, and fishermen, who would act in the capacity of instructors, and to whom returned soldiers could be apprenticed for instruction in navigation, the operation of steam and gas engines, care, casting, and hauling of trawling-nets, and the dressing, storing, curing and shipment of fish; the men during their apprenticeship to be paid a proper living wage and to be given a bonus from the ship's earnings after capital expenditure had been provided for. It is believed by your Committee that, well managed, such an operation would be sufficiently profitable to furnish the means of operation and maintenance, and create a sinking fund that would reimburse the Government and permit the vessel to be transferred to organizations of the men who would be desirous on their own behalf of the course of time. It is the opinion of your Committee that at the present time there is room for ten such training-ships on the Pacific Coast of Canada, each of which could provide training for at least twenty-five apprentices. Such a school, it is believed by your Committee, could be directed and operated in connection with the Naval Training School now established at Esquimalt. In further connection with the deep-sea fishing industry, it is the opinion of your Committee that the Dominion Government should establish at suitable places in the Province, such as Prince Rupert, Vancouver, and Victoria, fish curing, packing, and marketing schools for the practical training of overseas men in the curing, packing, and marketing of fish, and through which the catches of the trawlers could be distributed. Your Committee is of the opinion that such a proposal, if established, would mean the development of an industry through

which it would be possible to distribute fish not only in the Province of British Columbia, but throughout the North-west as far as and including the Province of Manitoba.

Your Committee further recommends that, in the event of the Dominion Government not seeing its way clear to inaugurate and maintain such a training-school or to lay down some lines for the development along lines of conservation, the Dominion Government be requested to turn over the entire fisheries of the Province of British Columbia to the Government of the Province of British Columbia, by way of leasing such fishing grounds or areas to the Province; and in the event of such being done by the Dominion your Committee humbly recommends that the Government of this Province take into its consideration the advisability of laying down a policy embracing the putting into effect and the carrying out of the recommendations hereinbefore made.

G. G. McGEER.

The report was received.

Ordered, That the report be considered on Tuesday next.

Note.—This important resolution received unanimous support of the British Columbia Legislature. It points out urgent necessity for conservation, deals with inadequate cold-storage facilities, lays down proposals to assist returned soldiers by engaging in trawling industry. So far as known, no consideration has yet been given this resolution.

COOKING EXPERIMENTS WITH FISH.

By Miss A. Doris McHenry, University of Toronto.

(The following synopsis is non-technical language of an interesting report, recently completed in the Household Science Department of Toronto University, summarises some valuable results, including comparisons of the cost and food value of some leading food-fishes. The full report is being published in *extenso* by the Biological Board of Canada, Ottawa, E. E. P.)

The war with its accompaniment of high prices and food shortage has brought many problems to the attention of the housewife, problems that will, in many cases, last for years.

The meat supply became one of the most predominant questions. There was such a shortage that the price in many cases doubled, thus necessitating either curtailment or substitution of other foods by the housewife with an average income. The Canadian people were, indeed, awakened to the great possibilities of fish as a substitute for meat, and the problem is to maintain fish as an important feature of our diet. The average Canadian housewife knows little about fish, or how to buy fish wisely or cook it attractively. Hence fish are even now neglected and quantities are unmarketed, and are wasted.

Canadians must in the future realize five points regarding our fish:—

- (1) — Fish are less expensive than meat.
- (2) — Fish can be made as attractive and satisfying as meat.
- (3) — Fish generally are almost as rich in protein as meat (only 2% to 4% less).
- (4) — Fish are more easily digested than meat.
- (5) — Our seas, lakes and rivers are providing vast quantities of excellent food in the shape of esteemed fish as well as little known fish, and much of it is going to waste.

The experimental work, on the fish here dealt with, attacked two problems:—

(a) — Which are the best common fish to buy from the standpoint of economy?

(b) — It is wise or desirable to introduce little used kinds of fish into our homes, regarded from the housewife's point of view?

The tendency is to use on the table fish-steaks, such as halibut and sea-salmon steaks. Though more expensive than the whole fish (such as haddock, herring, etc.) they require little or no preparation before cooking. Is the housewife losing money in preferring halibut steaks, at 32 cents per pound, rather than whole haddock at 15 cents? The cheaper fish require cleaning, skinning and boning, and these losses have to be paid for and the number of 'servings' from one pound is reduced. In addition to this loss from waste, there is the time and labour in preparing these lower-priced fish. On the basis of 20 cents per hour (a low figure) for the housewife's time, the price per serving is raised accordingly. The first problem is to estimate the cost per serving of fish in common use, and in this way compare the respective costs. In the experiments all the refuse was removed from the fish, including the head, tail, fins, skin, bones, and entrails, and thus to calculate the percentage of the edible portion remaining for table use. The time occupied in cleaning, pre-

paring, and cooking, was also calculated where the process of cleaning, scaling, &c., was necessary, and the time (at 20 cents per hour) added to the cost. The percentage of the edible portion being ascertained, it was possible to arrive at the cost of a serving of 3½ ounces. The results showed that the lower priced fish are not so much cheaper per serving than a more expensive fish, like halibut. There is less saving than the great difference in price would imply.

Take the haddock, for example. It costs only fifteen cents per pound, but barely 48 per cent of its weight is edible, after the entrails, skin, fins, and other refuse, are deducted. This raises the cost to 6 cents per serving. On an average it takes 15 minutes to clean and prepare even though the entrails have been removed by the retailer in the store. Thus the final cost per serving reaches 7 cents, whereas halibut only costs 8.2 cents. The edible portion of fish steaks is high, because the thin skin and small central bone are the only refuse, and as the difference is only 1.2 cents per serving it is worth considering, when a housewife is serving a number of people. Of mackerel, at 12 cents per pound, 59% is edible, and as there is no scaling and little cleaning, time is saved and the cost per serving is 5.5, or 2.7 cents cheaper than halibut; but it is less attractive in flavour and appearance. Flounders and other flat fish, at 14 cents per lb. are considered cheap fish, but as the edible portion is only 48%, the cost per serving is at least 6.3 cents. Servings of fish from which the bones have not been removed appear large though the food value is less than 3½oz. A 19 cent flounder sufficing for four servings would cost 4¾ cents per serving.

A general idea of the cost per serving of the following commoner kinds of food fishes can be gained at a glance; also the cost per lb. of protein in each case, and the food value.

	Cost per lb.	Per centage of edible portion.	Cost per serving.	Food value per serving.	Cost of lb. of protein.
Salmon	35	88	8.7	203	\$1.64
Salmon-trout, or Lake-trout	25		6.2	81.5	1.60
Halibut	32	83	8.2	121	1.76
Cod	20	90	4.8	70	.82
Haddock	15	47	6.0	72	.82
Mackerel	12	59.5	5.5	139	.66
Flounder	14	48	6.3	64	1.01
Herring	12	74	5.2	79.4	.60
Whitefish of Great Lakes	12	52	4.0	150	.54
Plaice	12	36	9.0		
Ling (bought in steaks)	10	72.8	2.7		
Beef, round " "	30	91.9	7.1	144	1.45
Lamb chops " "	42	86.5	10.8	145	1.97

Ling is a fish hitherto not commonly used and bought, cleaned and skinned, at the low cost of 11 cents per lb. and the edible portion is accordingly high—72.8%—thus costing only 2.7 cents per serving. It is very good boiled or fried, and should appeal to anyone who cares for fish at all. It affords the lowest cost figures in the table.

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Illustrations of the cost of time may be given as follows:—

Whitefish $(5.2+1.0) = 6.2c.$ figured at 20c. per. hour

Haddock $(6.0+1.0) = 7c.$ figured at 20c. per hour.

With the exception of halibut and salmon, which are as expensive as many cuts of meat, fish, it will be seen, are cheaper than meat from the standpoint of protein. The cost per serving is in general lower; but the fuel value of fish (with the same two exceptions) is lower than that of meat; but the prices per serving of the cheaper fish do not differ so much from the more expensive fish steaks, owing to the large percentage of refuse. Certainly cod, whitefish, mackerel, and herring, are very cheap sources of protein.

The second problem considered in this experimental work is the introduction of uncommon and unutilized fish into the homes of the Canadian people, many of these fish being of excellent food value, and providing a cheap food. A great proportion of these fish is wasted, which is unfortunate from the standpoint of food waste itself, and because it tends to raise the price of fish on the market. Were the fishermen able to sell more kinds of fish, their catches would be increased, and the prices would be lowered of staple kinds already in demand.

Amongst the uncommon fish obtained, cooked and tested in different ways, were the skate, and dog-fish, or grayfish, as it is now called.

In Great Britain there is a good market for Skate and an effort is being made to render this fish popular in Canada, as it is claimed to be one of the most nourishing of all fish foods, and is particularly rich in phosphorous.

The wing-like side fins, supported by cartilaginous bones, from which the flesh is difficult to separate, are the only part utilized. In the Government Cook-Book, boiling is most favoured, after the fish is skinned, cut into strips, twisted into rings, and cooked until it is tender. This method proved so difficult that it cannot be wisely considered from a housewife's point of view. In the laboratory a portion of the fish was merely skinned and boiled in the usual way; but the flesh proved tough and stringy after longer cooking than is needed for common edible fish. The flavour was fairly good but it was marred by the texture of the flesh. Frying was tried, much time being spent in separating the flesh from the bones, in pieces suitable for frying. The pieces were dipped in egg and bread crumbs to make them as tasty as possible, but the results were unsatisfactory; the warm flesh smelt strongly of ammonia, and the flavour was disagreeably strong, and the texture tougher and more stringy than when boiled. Baked Skate again proved objectionable from all standpoints. As a scalloped dish it was

best, the texture not being noticeable, but the flavour was far less agreeable than that of the fishes to which we are accustomed. Is it worth while to encourage the wide use of Skate in Canada? It is true that it is plentiful, easily obtained, and of good food value. It is wrong to waste good food. Yet it does not seem advisable from the housewife's standpoint. It costs only 12c. per lb. but there is great loss in refuse, and time occupied in preparation. The fish was so difficult to skin that the attempt to accurately ascertain the proportion of edible matter, as compared with other fishes, had to be finally given up. With so much cartilage and heavy skin, it would be undoubtedly low. If great food needs arose, Skate might prove a desirable and excellent food, but under present conditions it cannot be recommended to the housewife.

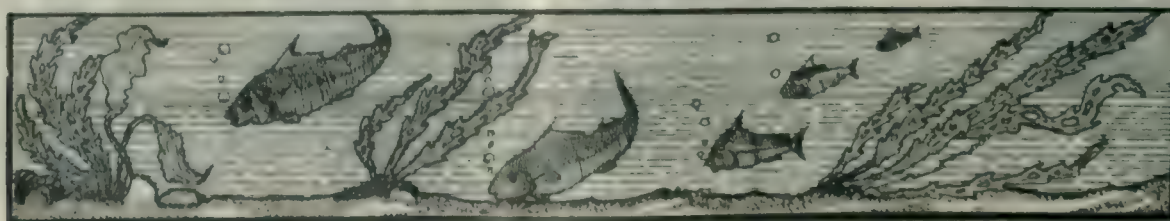
Of the Dog-fish, or Grayfish, so largely wasted, it can be said that it is a good food fish. The flesh is very white, fine in texture, with a slightly bitter flavour, noticeable in all methods of cooking. The best flavour is obtained by boiling. The eel-like body is covered with a heavy skin, so difficult to remove that a great deal of time is wasted in preparation, and perhaps the skin should be left on, and removed after the fish has been boiled, and before serving.

Amongst the Flounder family, the Plaice resembles the Halibut in texture and flavour, and cooked in the same ways as halibut it is just as delicious; but the skin is heavy, tough, and difficult to remove. The edible portion is 36 per cent and at 12 cents per lb., the cost per serving would be 9 cents. The amount of the edible portion is difficult to estimate, owing to the flesh adhering so strongly to the smaller bones. It takes 20 to 30 minutes to prepare (i. e. to skin and bone) whereas halibut steaks really require no preparation.

The fresh water Ling or Cusk, already referred to, is an abundant, unutilized fish, and its use seems advisable from the standpoint of economy and avoidance of waste. The flesh is dark, but not objectionably so, and its flavour is good when boiled or fried; but when steamed it is rather too decided. In the list of prices per serving already given, it comes lowest.

The conclusion reached may be summarized as follows:—

1. Skate and Dog-fish could be utilized as food very successfully were the need to arise; but cannot be recommended as tasty additions to the menu. Skate cannot be recommended from an economic standpoint.
2. Plaice is as delicious as most of the good fish now used, but is not recommended from an economic standpoint.
3. Ling or Cusk is a cheap and good food-fish, and should be more widely used in Canada.



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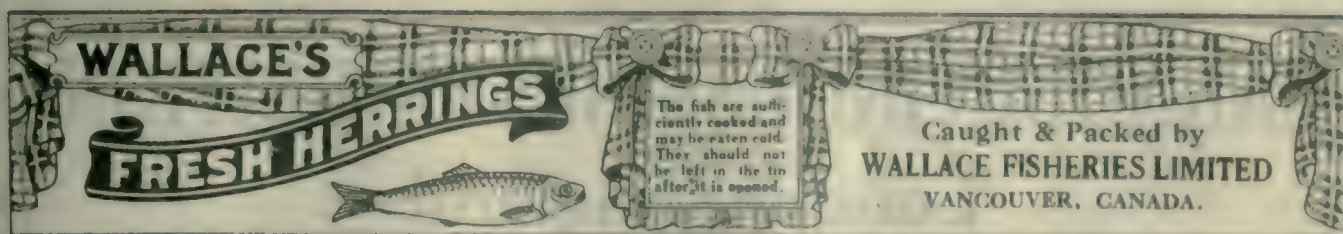
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Synopsis of Lobster Fishery Regulations in Force on
December 1st, 1918

No. of District.	Limits.	Fishing Season.	Size Limits.
1	Charlotte County, New Brunswick	Nov. 15th to June 5th . .	10 1/2 inches.
2	St. John County, New Brunswick	Nov. 15th to May 23rd . .	9 inches.
3	Albert County, New Brunswick, and that portion of Cumberland County, bordering on Bay of Fundy and tributary waters, as well as the Counties of Kings and Annapolis excluding Digby Gut and Annapolis Basin, Nova Scotia.	Jan. 15th to June 29th . .	9 inches.
4	Digby County, including Digby Gut and the entrance thereto and Annapolis Basin, Yarmouth, Shelbourne, Queens, Lunenburg and that portion of the County of Halifax west of a line running S.S.E. astronomic, from St. Georges' Island, Halifax Harbour, coinciding with the Fairway Buoys in the entrance of the said Harbour	Mar. 1st to May 31st . . .	No size limit.
5	From line in Halifax Harbour running S.S.E. astronomic, from St. George's Island, Halifax Harbour, and coinciding with the Fairway Buoys, in the entrance of the said Harbour, extending eastwardly and following the coast line as far as Red Point, between Martin Point and Point Michaux, in the Island of Cape Breton, and including Chedabucto Bay and St. Peter's Bay, and the coasts and waters of all the Islands lying in, and adjacent to these bays, and including the coasts and waters of the Gut of Canso, as far as a straight line passing from Flat Point in Inverness County, to the lighthouse opposite, in Antigonish County	April 20th to June 20th . .	No size limit.
6	Cape Breton Island, from Red Point northwardly to Cape North, Victoria County, including St. Paul's Island.	May 16th to July 15th . .	No size limit.
7	Waters of Northumberland Strait between a straight line on the northwest drawn from Cheekfish River, New Brunswick to West Point, Prince Edward Island, and a straight line on the south-east drawn from the west side of River Philip channel at the mouth of the river Nova Scotia, to the eastern entrance to Victoria Harbour, Queens County, Prince Edward Island	Aug. 16th to Oct. 15th . .	No size limit.
8	On and along that portion of the coast or the waters thereof of the Provinces of Nova Scotia, New Brunswick and Prince Edward Island from Cape North Victoria County, Nova Scotia, westwardly and southwardly, and following the coast-line to a straight line drawn from Flat Point in Inverness County to the lighthouse opposite in Antigonish County, thence westwardly and northwardly and following the coast line to the northern boundary of New Brunswick including the coast and waters thereof of all the islands adjacent to these portions of the coasts of the said Provinces, as well as the coast and waters thereof of the Counties of Quebec south of the river St. Lawrence, except district No. 7 and the Magdalen Islands.	April 26th to June 25th . .	No size limit.
9	Magdalen Islands, including Bird Rocks and Bryon Island, excepting in the lagoons of these islands, where lobster fishing is not permitted at any time	May 1st to July 20th . . .	No size limit.
10	That portion of the Province of Quebec north of the Gulf and River St. Lawrence, including the coast or waters thereof of Anticosti Island	May 20th to July 31st . .	No size limit.

*Both dates given are included in each instance.

1. Soft-shell or berried lobsters must be liberated alive by the person catching them.
2. Lobster traps may not be set in 2 fathoms of water or less at low water nor shall they be placed nearer than 100 yards to any stationary salmon net set for the purpose of taking salmon.
3. No one shall offer for sale, sell, barter, supply or purchase any fragments of lobsters, lobsters purposely mutilated or broken up, or any broken lobster meat, nor for canning purposes shall any lobster or lobsters be

boiled or partially prepared elsewhere than in the cannery licensed for that purpose.

4. No one shall engage in lobster fishing without first having a license from the Department of the Naval Service.
5. No one shall engage in the canning of lobsters without first having obtained a license from the Department of the Naval Service.
6. Licenses may be secured through the local fishery officer.

G. J. DESBARATS

Deputy Minister of the Naval Service.

Ottawa, December 1, 1918.

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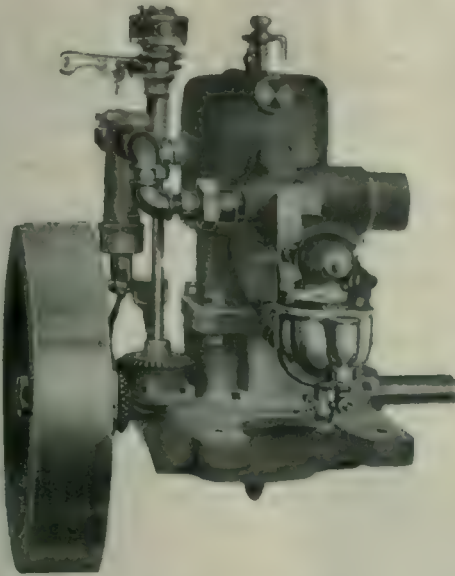
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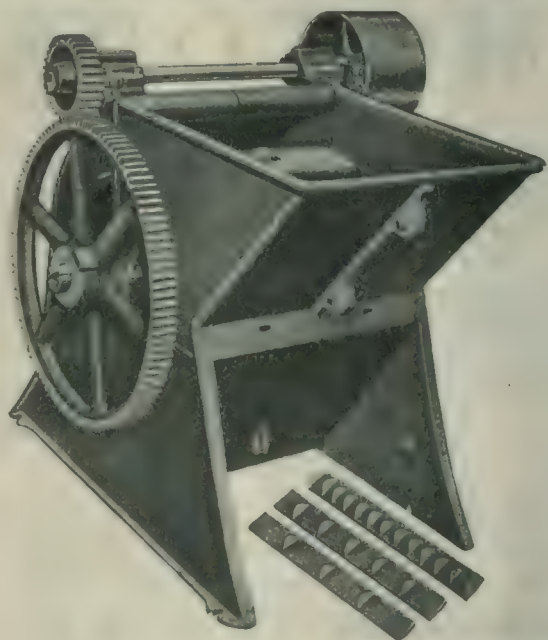
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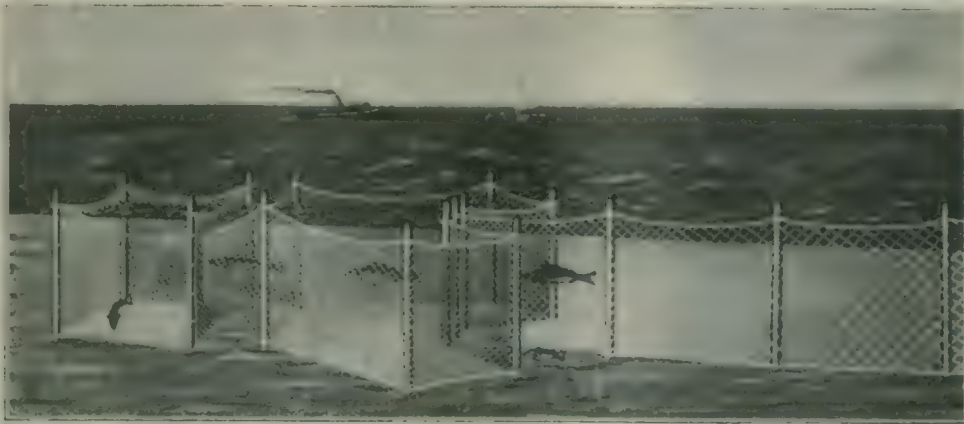
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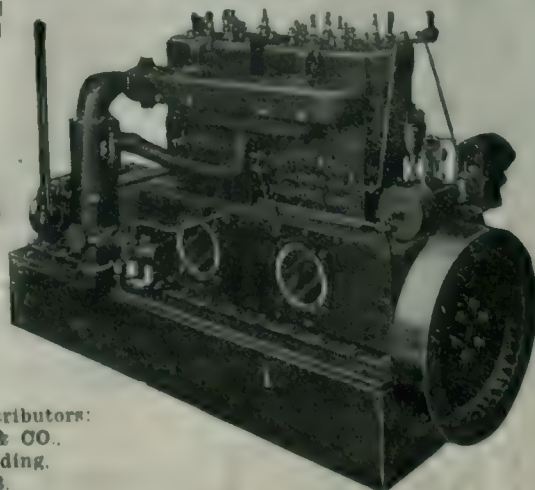
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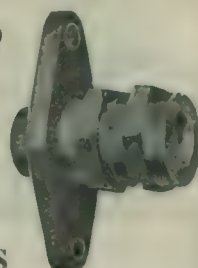
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THE CANADIAN FISHERMAN

Official Organ of the Canadian Fisheries Association

VOL. VII.

GARDEN CITY PRESS, Ste. Anne de Bellevue, MARCH, 1920.

No 3.

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The Engine that represents
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Seattle, Washington, August 20th, 1919

Dear Sir—

Thinking that you would be interested in the trip of the Motorship "Ozmo", I am writing in regard to the voyage from Seattle to Bethel, Alaska, on the Kuskokwim River, a distance of 2500 miles. We left Seattle June 19th and arrived at the Behring Sea July 3rd, and the first time that the engine was stopped was when we came to anchor at the mouth of Kuskokwim, waiting for the fog to raise. We averaged about 7 knots and consumed less than 8 barrels of fuel oil per day. After arriving in the river 175 miles from Bethel, it was continually backing and going ahead on account of the shoal water. I DO NOT KNOW OF ANOTHER INTERNAL COMBUSTION ENGINE THAT WOULD HAVE HELD UP.

WE ARRIVED IN SEATTLE AUGUST 9th, AFTER A RUN OF OVER 5000 MILES WITH ABSOLUTELY NO ENGINE TROUBLE.

Very truly yours,

(Signed) J. P. BROWNER,

Chief Engineer Motorship "Ozmo".

Mr. Browner also states elsewhere that there was not a single cent for engine repairs for this voyage, and as far as he knows, NOT MORE THAN FIFTY DOLLARS HAS BEEN SPENT FOR REPAIRS SINCE THE ENGINES WERE INSTALLED IN 1915.

The "Ozmo" is a typical example of
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Although the British Columbia fisheries show remarkable development in some branches, it may be confidently stated that the Industry is still in the initial stage, for 80 per cent. of the yearly output is credited to salmon, which (with the exception of halibut) is the only fish which has so far been taken in large quantities.

During the year 1917 the value of fish caught and landed in the Province was over twenty-one and a half million dollars (\$21,500,000).

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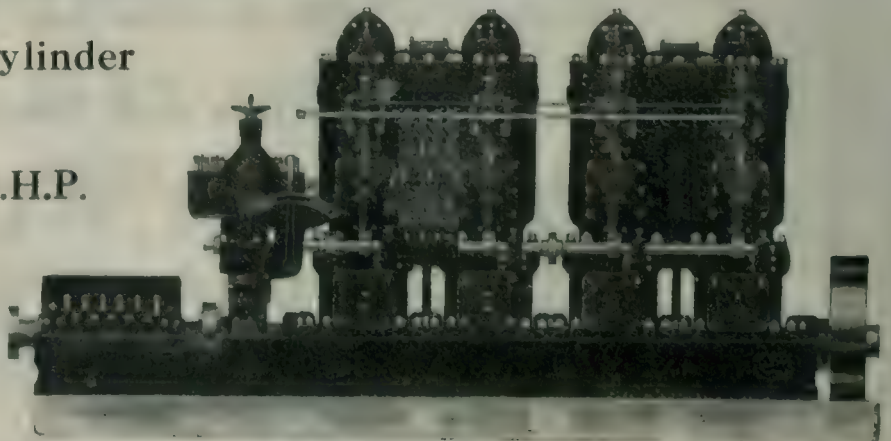
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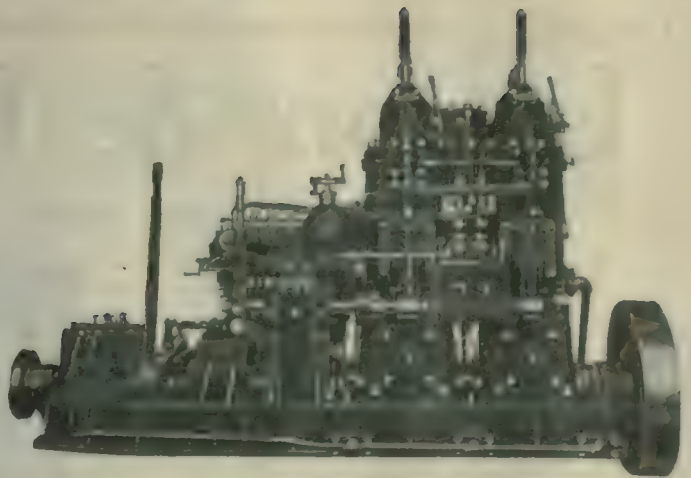
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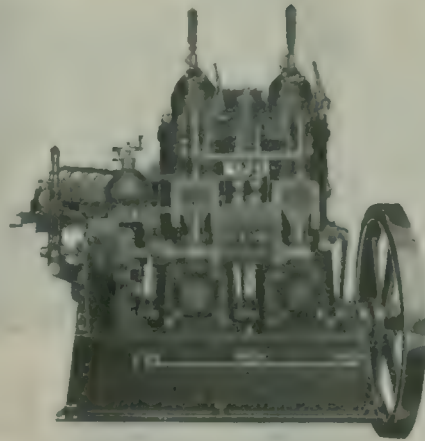


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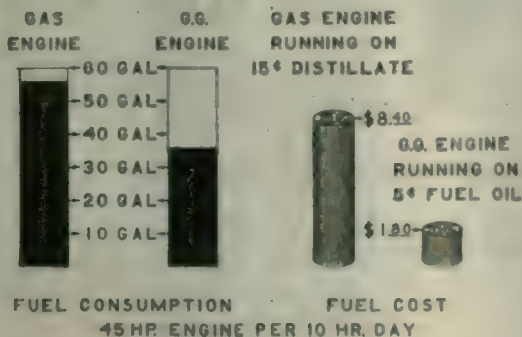
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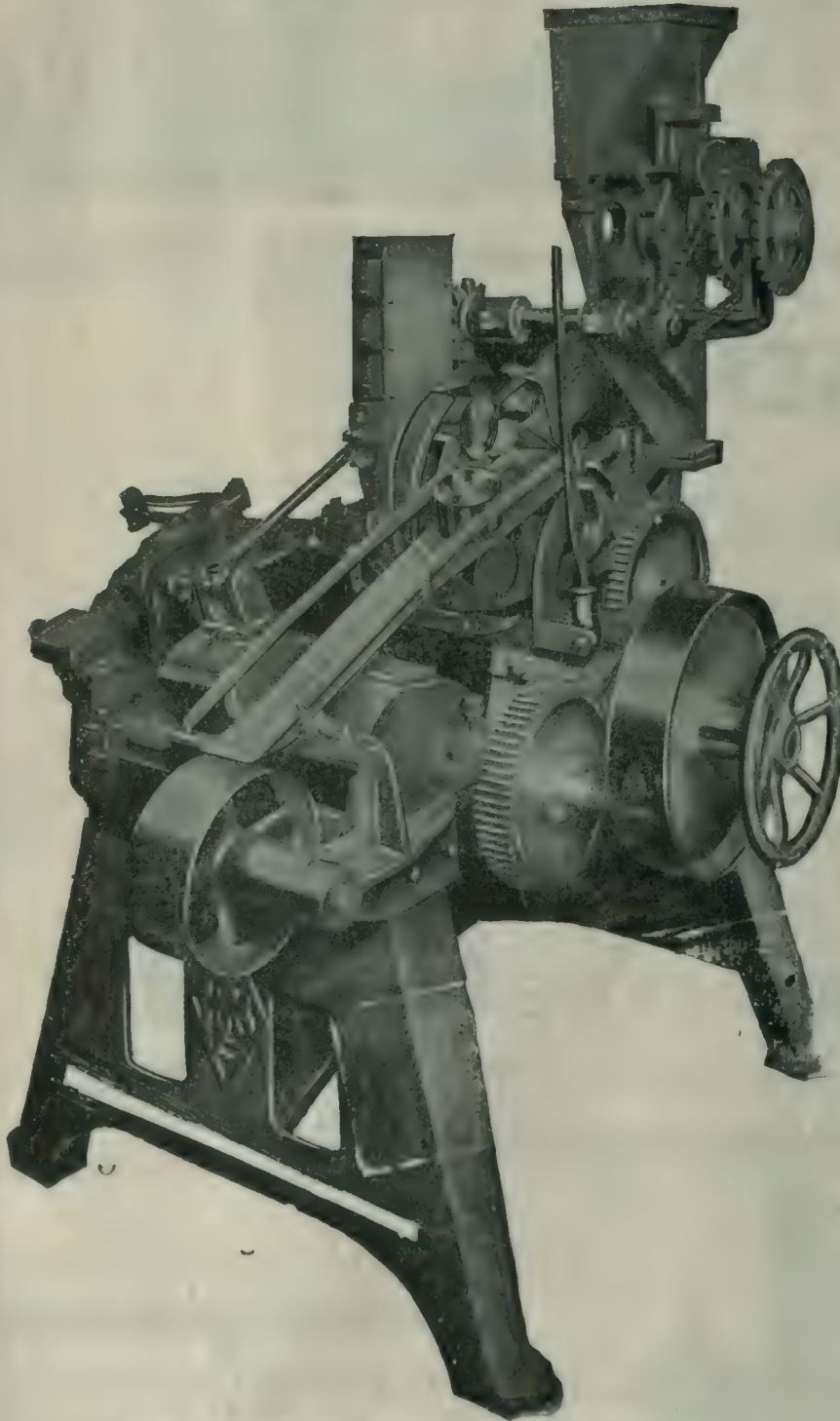
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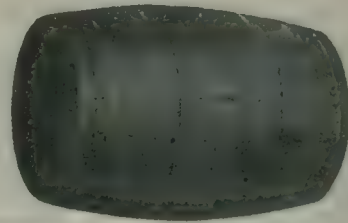
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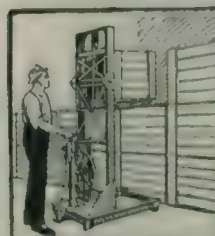
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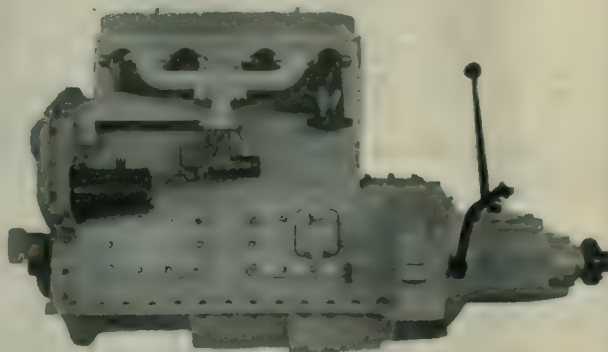
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Mr. Cobb was for 17 years a field agent of the U.S. Bureau of Fisheries, and in the course of his duties visited practically every fishing settlement and packing establishment in the United States many times; later was editor of the Pacific Fisherman, and now is Director of the College of Fisheries, University of Washington.

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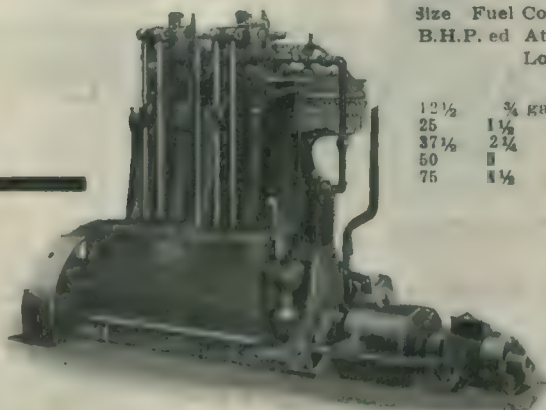
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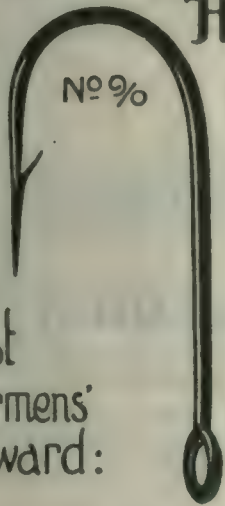
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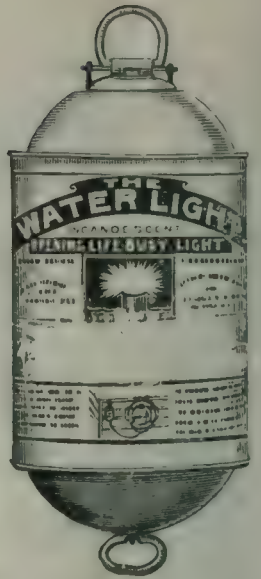
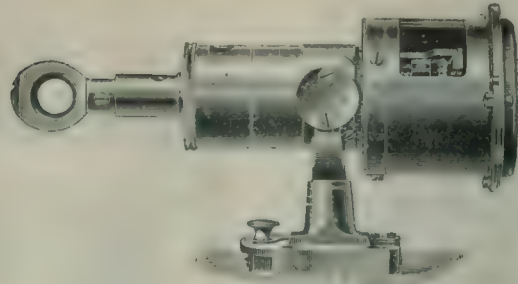
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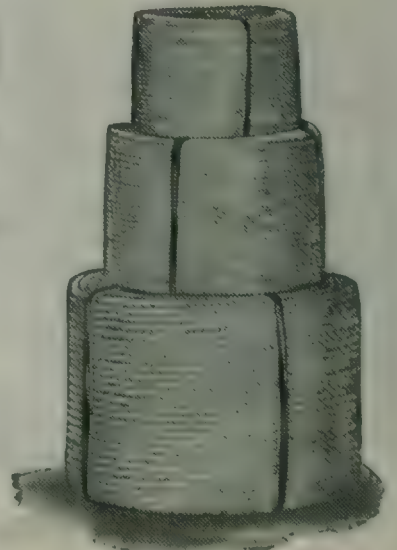
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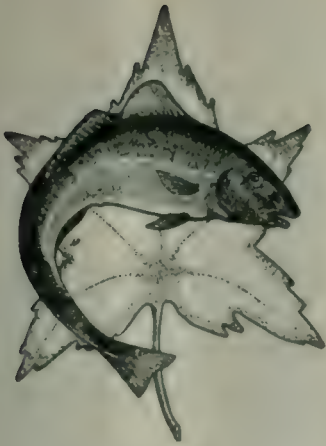
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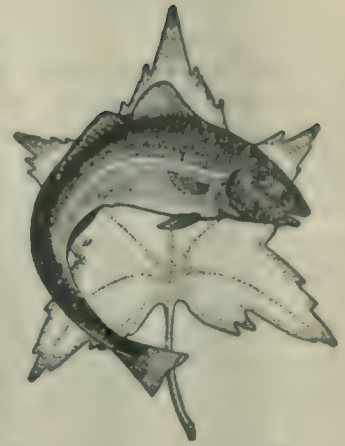
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MARCH, 1920.



FREDERICK WILLIAM WALLACE
Editor



Embargo on Raw Salmon Necessary to Preserve Industry for Canada

Careful investigation into conditions at present obtaining in the salmon fisheries of British Columbia lead us to strongly urge the placing of an embargo upon the export of raw salmon for manufacturing purposes.

There are numerous excellent reasons in favor of an embargo and very few of any moment against, but the sound economic principle of manufacturing one's raw products within the country of production must be the clear aim of Canadian capital, labor and administration.

Canada is a country singularly endowed with wonderful natural resources in fisheries, minerals and timber. It is not good policy for Canadians to ship these raw materials abroad to be finally manufactured in another country. By doing so we take but one profit and employ only the actual producers. By manufacturing our raw materials into the finished product within our own borders the profits remain within the country and a larger field of employment is opened for the Canadian worker.

The insatiable maw of our friendly neighbor to the south absorbs huge quantities of Canadian raw materials. These raw materials are manufactured there and either used in the United States or exported to markets where they sell in competition with the Canadian manufactured production.

This is especially true with regard to British Columbia Pink and Chum Salmon. These fish are purchased in high quantities by American canners; packed in Puget Sound canneries and are sold in the U.S. markets or in competition with Canadian packed fish in foreign markets. The American buyers, through cheaper production of their Alaska packs and greater quantity of contracted pack, are able to offer high prices for the British Columbia pinks and

chums necessary to round out their exportable surplus of canned salmon.

An embargo already exists on the export of Canadian sockeye salmon and Canadian canners can hold their own in foreign markets with all competitors in this particular fish, but in the case of pinks and chums—the fish we have to depend upon for the future existence of the Canadian salmon canning industry—the high prices bid by American canners greatly increase the cost of our domestic pack and militate against us in marketing our canned fish in competition with the Canadian produced and American packed article.

The American canners depend upon Canadian fishermen for a large quantity of chum salmon to supply their domestic and foreign trade. The Canadian packed chum salmon is practically excluded from the United States market by a tariff on manufactured fish and conditions in the American industry allow of their chum salmon being marketed abroad much more readily than ours. An embargo upon the export of Canadian salmon for manufacturing purposes is the only solution to this state of affairs. Such an embargo will give Canadian canners a chance to manufacture and market these fish themselves and rehabilitate the salmon canning industry.

The argument has been advanced that the fishermen will suffer through the elimination of American competition for the purchase of their raw fish. This contention does not hold, for, if the Canadian canners held the market through the placing of an embargo they would be in a position to pay as good a price as the American canner, and eventually, better.

The whole question must be regarded by fishermen the Government, in its broadest aspect and in the

interests of the building up of Canadian manufactures. It does not pay to barter our birthright for a mess of pottage. Canada's whole future as a nation hinges on the exploitation and manufacture of her natural resources. We do not want to be a nation of mere fishermen, miners and lumbermen—looters of our natural resources working for the manufacturers and salesmen of other nations. If we are content to remain so through timidity in legislation and heedlessness of the future we shall be false to the ideals of our pioneer forefathers who were bold in conception, strong in their faith of Canada's prospects, and quick to lay down economic principles for the sake of the nation and the generation to come.

PLAN YOUR SUMMER VACATION TO TAKE IN THE CANADIAN FISHERIES ASSOCIATION CONVENTION AT VANCOUVER, JUNE 3rd, 4th, and 5th.

THE VANCOUVER FISHERIES CONVENTION IN JUNE.

The Secretary of the Canadian Fisheries Association visited Vancouver in February to make arrangements for the Association Convention there on June 3rd, 4th and 5th.

The Vancouver members of the Association, under the Chairmanship of Mr. A. L. Hager, have pledged themselves to a programme of entertainment which will be unexcelled by any previous Convention of the C.F.A.. A ladies Committee will be formed to entertain the wives of the delegates and automobile drives, cruises, teas, etc., will ensure that the lady visitors will be well looked after.

An important business programme is being drawn up and many very interesting and instructive papers will be read and discussed by notable fishery authorities. Invitations are being sent to the Hon. C. C. Ballantyne, British, American, Newfoundland and Canadian fishery officials and scientists, and the City of Vancouver will extend an official welcome to the fishery delegates.

A large number of members have signified their intention of going to Vancouver and the Association extends a hearty invitation to any person interested in the Canadian Fishing Industry to come along. Members of other Fishery organizations are invited to send delegates.

It is tentatively proposed to travel right through to the Coast without stop-overs—picking up delegates at Montreal, Ottawa, Sudbury, Port Arthur, and Winnipeg. Arrival at Vancouver is timed for June 2nd—the day before the Convention opens. After the Convention closes, the delegates will be at liberty to travel home either direct or via Prince Rupert and it is hoped that many will avail themselves of the opportunity to enjoy a wonderful sail up the Coast and a visit to the premier fishing port of the North Pacific. Arrangements will be made with the railroad companies for reduced fares, and all particulars regarding the convention will be given by bulletins to members and in these columns.

CANADIAN FISHERIES COLLEGE UNDERWAY

The ideal, which has so often been mooted in these columns of a School of Fisheries is now in a fair way to be realized. A grant of ten million dollars for technical education has been made by the Federal Government to be distributed through the Provincial Governments, and Prof. Lester W. Gill has been appointed as Director of Technical Education to administer the grant.

While on the Pacific Coast, the Secretary of the Canadian Fisheries Association was able to interest Prof. Gill in the educational needs of the fishing industry and a visit was made to the College of Fisheries at Seattle. This College, established a year ago and under the administration of Prof. John N. Cobb, has proved a great success and has almost a hundred students enrolled. Prof. Cobb was enthusiastic over the prospects of the College and Seattle fishing interests are supporting the school in every possible manner—fully realizing the benefit of technical education to the fishing industry.

In Vancouver, Prof. Gill and Mr. Wallace succeeded in interesting the Pacific members of the Association in a similar college for those engaged in the fisheries of the Pacific coast of Canada and a strong committee was appointed to go thoroughly into the matter and prepare concrete plans for the establishment of a Fisheries School.

The suggestion is that the Fishing Industry in British Columbia raise funds to build or purchase a suitable building and equip it with the necessary apparatus and furniture. The Government will be asked to undertake the maintenance and up-keep of the institution through the Technical Education appropriation and the Provincial Government will also assist. If the Industry will undertake to do this, there will be no difficulty in getting the Government aid for maintenance of college and staff.

Two courses of study are suggested—on a short course of three months, and the other of four years. The short course is intended for fishermen, foremen, superintendents, etc., and would be designed to give instruction in the handling of fish, canning, curing, smoking, freezing and preparation of fish, some natural history and bacteriology, oceanography, navigation, use and repair of machinery and engines, etc. The four year course is designed for those who will become managers of fish companies, research workers fish hatchery officers and other occupations calling for a wider knowledge.

It is explained by Prof. Gill that the grant cannot be given to a college administered under the auspices of a University. The vocational college must be kept close to the industry it is training in order that men will not be educated away from the job instead of to the job. There is, however, no objection to such a college co-operating and working in close harmony with a local University.

The British Columbia Committee is composed of Mr. F. H. Burke, Manager, Wallace Fisheries, Ltd.; Mr. Henry Doyle, Manager, Northern B.C. Fisheries Ltd.; Mr. J. Davis, Superintendent Canadian Fishing Co., Ltd.; Dr. C. McLean Fraser, Professor of Biology, Pacific Biological Station. All these gentlemen are convinced of the necessity for a school of tech-

meal training for the fishing industry and they will endeavor to have a report on the matter ready for presentation to the Association Convention in June.

It is highly desirable that our Atlantic fishing industry follow the lead of our Pacific friends and work for the establishment of a fishery school in Halifax. To that desideratum, an effort will be made to interest Atlantic members.

SEE YOU IN VANCOUVER! ALL THE LIVE ONES IN THE INDUSTRY WILL BE THERE IN THE MERRY MONTH OF JUNE.

INTERNATIONAL SCIENTIFIC FISHERIES COUNCIL

The suggestion of the Canadian Fisheries Association that an International Scientific Fisheries Council be formed for Fishery research and exploration of the fishing grounds of North America—said Council to be composed of members appointed by the Governments of Canada, the United States and Newfoundland—seems to meet with very favorable considerations. A number of Canadian and American fishery officials, scientists and those engaged in the industry have expressed their approval of the idea and will endorse the move.

Dr. A. G. Huntsman, on behalf of the C.F.A. is communicating with officials and others in the three countries and he is hopeful of being able to present something concrete to the Convention of the Association in Vancouver. Fishery officials, scientists, and leading men in the fishing industry of the three North American countries will be invited to attend and discuss the matter and evolve a plan of action.

Besides endorsement of the suggestion by Canadian newspapers and American fishery Journals, the New York "Sun" in a recent editorial says:—

"Part of the angler's delight is exploration and discovery of shady pools unplumbed by other lead than his, hidden streams where the trout play through the netted sun and shadow under low-hanging branches. But the men who seek daily food for themselves and the hungry millions cannot waste long days in such pursuit. They must know where the food is to be found.

For them, and indeed, for all of us the Fisheries Convention called to meet in Vancouver, B. C. on June 3 has a more than picturesque interest. Experts from the United States, England and elsewhere have been invited to attend. The plan is to form an international council. Part of its work will be to chart the fishing beds on the Atlantic and Pacific coasts. There will be discussion of the best way to regulate this industry through legal enactments.

All these labors affect in the end both the cost of living and the satisfactions of life. Fish is more and more looked upon not only as a pleasant variation in diet, but as a dependence."

THE WONDERFUL PACIFIC COAST IN JUNE IS AN IDEAL PLACE FOR BUSINESS AND PLEASURE. THE C.F.A. CONVENTION WILL BE HELD IN VANCOUVER, JUNE 3rd, 4th and 5th.

INSPECTION OF CANNED FISH

No person engaged in the export trade in Canadian fish products will deny that there is a pressing need for inspection of the goods before shipment out of the country. Whether this inspection will be undertaken by the Government or by the industry is not yet determined, but it must be carried on by one of the two as soon as possible.

How such inspection will be carried out effectively is a matter for considerable debate. Taking the case of the salmon canning industry of British Columbia where the fish are packed in some seventy or eighty canneries scattered throughout the length and breadth of the Canadian Pacific seaboard, it would be too costly and difficult a scheme to place an inspector in every cannery for the duration of the fishing season. Also, to inspect cases of salmon in warehouses by examining certain packs selected at random is by no means effective.

It has been suggested, and the plan is worthy of consideration, that the Cannery Managers or Superintendents act as inspectors for the pack produced under their supervision. Each cannery would be numbered and the number stamped on the can which would immediately identify the cannery producing same. By making the cannery manager responsible for the pack of his cannery, the canning of stale fish would be eliminated. No doubt, the manager would have to be suitably remunerated for the assumption of this responsibility.

In the Atlantic fisheries a similar plan might be worked in connection with lobsters and other canned fish, and even to pickled and cured products.

WHERE IS THE FISHERY STATISTICS REPORT FOR 1918?

Here we are three months into 1920 and the Fisheries Statistics for 1919 have not yet been published. For the details of our fishery catch and values we are still consulting the Blue Book for 1917. Such tardiness in the publication of valuable reports show a lack of organization somewhere.

DEPARTMENT OF FISHERIES REPORT FOR 1918.

The Report of the Fisheries Department for 1919 has just been received from the King's Printer. This is not the Statistical Report but merely a resume of the Department's operations during the year.

The reading of this Report is like delving into ancient history—a record of happenings that we have almost forgotten—and the age of the report makes comment useless. We can only file it among the archives.

This report for the year 1918 is received in March 1920. The Report of the U. S. Commissioner of Fisheries for the year ended June 30th, 1919 was received by us before the end of that year. The British Columbia Fisheries Commissioner's Report for the year 1918 was received last year.

The whole industry is dissatisfied with the tardy publication of our Canadian Fishery Reports.

SERVICE.

The motto of our well-beloved Prince of Wales is "I SERVE." This may be applied to ourselves. The CANADIAN FISHERMAN is published to serve the fishing industry of Canada and our motto is "We Serve!"

Few people realize the power and influence of a well-established trade journal. Few newspapers can guide or reflect the opinions of industry as can a good trade or industrial magazine. The newspaper's field is too general and is often politically biased. The CANADIAN FISHERMAN has no politics, no interests in affairs outside of the fishing industry, and no ulterior motive but that of serving the Industry and developing Canada's fishery resources.

We are now in our seventh year of publication and we have kept pace with the times. Our first number was an issue of 42 pages: our present issues average 100 with special issues running to 180 pages. Our subscription price has not advanced since the first issue published in January 1914—in spite of the fact that costs of printing and paper and production have gone up tremendously.

We have seen wonderful changes in the Canadian fishing industry since our establishment and we feel that we can justly claim to have done our part in such development work as has been done. When we first published the CANADIAN FISHERMAN, the Canadian fisheries were annually valued at \$29,000,000. In 1918, the value was \$60,000,000.

The CANADIAN FISHERMAN desires to present the needs and requirements of the Canadian fishing industry in all its branches. The Editorial Staff can do some of this work but it cannot do all. No Editor can be expected to have an intimate knowledge of every phase of the far-flung fisheries of this vast country. There are doubtless many features we have neglected and overlooked but the fault is not ours. It is really the fault of you who knew what was wrong, or what was wanted, and who withheld the information by not presenting the story to the Editor.

Our columns are always open to the presentation of any case and to constructive criticism. There are many matters to be adjusted; many things to be done in our fisheries, but it is only by giving the subject publicity in the CANADIAN FISHERMAN that interest can be aroused and interests awakened.

Our Motto is "We Serve!" Make use of our service!

IF YOUR HEART IS IN THE FISHING INDUSTRY OF CANADA AND ITS DEVELOPMENT YOU WILL BE IN VANCOUVER IN JUNE.

FISHERIES PUBLICITY WORK

The Publicity Division of the Fisheries Department, Ottawa are arranging an essay competition among the school children of Canada. The subject will be "Canada's Fisheries" and prizes will be given for the most intelligent papers on the matter. A similar competition is being held among the Domestic Science classes of Canadian schools on the value of fish as a food and the proper preparation of fish for the table. Any plan which will tend to educate the young people of Canada to the potentialities of our fisheries is to be commended and we believe the essay competition among school children to be a good move.

PISCATORIAL PARAGRAPHS

Mr. J. W. Nicholls of the Canadian Fish and Cold Storage Co., Ltd., Prince Rupert, B.C. joined the Benedicts on Feb. 16th. Our best wishes go to Mr. Nicholls and the lady of his choice.

Export trade in Canadian fish products to countries other than the United States and China is very much affected at present by the adverse rate of exchange. There seems to be no immediate signs of adjustment and Canadian exporters, like other producers, are wondering as to the future.

It seems to be pretty obvious that Lord Leverhulme's great fishery enterprises in Europe are for the purpose of securing huge supplies of fish oils for use in the great Lever soap manufacturies. Report has it that his Lordship has secured a process for deodorizing fish oils and rendering same suitable for the manufacture of soaps, oleo and other oil products.

The suggested council for Scientific Fishery Research in North American waters by an organization composed of members composed by the United States Canada and Newfoundland appears to be very favorably received by those interested in the U. S. fishing industry. The Canadian Fisheries Association hope to secure the co-operation of the Governments interested and have the Council or Commission organized at the Convention to be held in Vancouver, June 1920.

The motor trawler "Jutland" is thought to have been lost at sea either through collision or internal explosion. Two dories belonging to the vessel were picked up by the Halifax steam trawler "Lemberg" 100 miles S.S.E. of Halifax on March 11th, and the body of the "Jutland's" mate was found in one of the boats. The ill-fated trawler was a wooden vessel of recent construction powered by oil engines, and carried a crew of twenty-two men. The "Jutland" was owned and operated by the La Have Fishing Co., and fished out of Liverpool, N.S. Last September, the wooden trawler "Promotion," also fishing out of Liverpool, was run down and sunk on the Banks. Two valuable trawlers have thus been wiped from the Canadian fishing fleet within the past six months.

While two trawlers have been lost recently from among the Atlantic fishing fleets, other trawling is still going ahead in Canada. The motor trawler "M.F.B." is fishing out of Halifax; Leonard Fisheries, Limited, are operating the "Baleine;" Maritime Fish Corporation, Limited, have the "Rayondor" and "Corrie Roy" fishing out of Canso, Loggies have the "Orontes", while the National Fish Co., are operating the "Lemberg" and "Vanes-ta." A new wooden steam trawler, the "Bernard M." is fitting out in Yarmouth and will be commanded by Capt. Clayton Morrissey—well-known as a high line salt fisherman.

The little steam drifter "Thirty-Three," owned by the Federal Fisheries Department and used for experiments in drift-net fishing, is for sale at Canso, N.S. The drifter was brought out from Scotland several years ago and made her headquarters in Canso.

Mr. J. A. Paulhus, Chairman of the C.F.A. Publicity Committee is making a collection of fish posters, handbills, advertising pamphlets, etc., for a Publicity Exhibit at the Vancouver Convention. The trade are invited to send Mr. Paulhus samples of any advertising matter that have gotten out in order that it be included in the exhibit. Exchange of views on advertising "stunts" will benefit the industry as a whole.

SEE YOU IN VANCOUVER AT THE C.F.A. CONVENTION IN JUNE!

RECENT FISHERIES LEGISLATION.

Feb. 7th. All streams tributary to Red Deer River, Bow River, Elbow River, Old Man River, Old Bow River, and Highwood River, Province of Alberta, to be set apart from all fishing for two years after May 1st, 1920.

Atlantic Fishing Bounty Act amended, to read as follows:

Canadian registered vessels, owned and fitted out in Canada, of ten tons and upwards (up to eighty tons) by whatever means propelled contained within themselves, which have been exclusively engaged during a period of not less than three months in the catch of sea fish, other than shellfish salmon or shad, or fish taken in rivers or mouths of rivers, shall be entitled to a bounty to be calculated on the registered tonnage, which shall be paid to the owner or owners; provided that whether the ownership of such vessel be changed or not during the fishing season, said bounty shall be paid once only during each season, and under a claim for the first three months fishing only; moreover if such vessel be under charter, the charterer shall, unless otherwise determined by the charter party or other written contract made between the owner and charterers, be deemed to be the owner for the purposes of this and the succeeding paragraph of these regulations and entitled to be paid the said bounty; provided further that vessels known as "steam trawlers" operating "beam," "otter" or other such trawls, shall not be eligible for any such bounty.

WALTER LAMBERT OPENS NEW OFFICE

Mr. Walter Lambert, Hon. Naval Architect to the Canadian Fisheries Association and formerly Asst. Director of Steel Shipbuilding of the Imperial Munitions Board, is opening an office at 14 Place Royale, Montreal and re-commencing business as a Consulting Naval Architect, Vessel Designer, Insurance and Salvage Inspector, and agency for ship's engines and fittings.

Mr. Lambert has recently returned from a trip to Great Britain and France where he visited the leading shipbuilding yards and secured several agencies.

DON'T FORGET YOU HAVE A DATE IN VANCOUVER ON JUNE 3rd, 4th, and 5th.

LETTERS TO THE EDITOR.

Ottawa, Feb. 6, 1920.

To the Editor,

"Canadian Fisherman."

Dear Sir,

The "Canadian Fisherman" for January, just received is full of good ideas, but at the present time I wish to refer more particularly to your article headed "Standardization and inspection of our fish urgently needed."

As a reader I endorse every word of this heading, although I do not entirely agree with much that is written in the subject.

In the distribution of fish there are two principal classes interested. The firm which makes the shipment from the producing point, commonly called the Producer and the Retailer, who hands the goods over to the consumer and is in a position to have all the complaints, etc. which crop up from time to time.

Unfortunately the retailer has to be satisfied (and this I say deliberately) with the quality and standardization of fish which the afore-said producer feels like shipping. It is interesting to read "that President..... and Secretary Wallace of the C. F. A. had an informal interview with the Hon. C. C. Ballantyne and strongly urged that something be done."

These officials of the C. F. A. have done much to improve conditions in the fishing industry, but as a retailer, it seems to me, however, that it should no more be necessary to legislate Producers into standardizing many of their lines, than it is to make the citizen of a free country a "puppet" by Act of Parliament.

To mention a few items which might be standardized so that a retailer would know what to expect when he places an order. Of course, as you are aware much of the fish business, that is, the placing of orders is done by telegram and much is left to the good-will or otherwise, of the producer. What weight of fish am I entitled to expect when I order Tom-Cods by the barrel?

When I order Extra Smelts of No. 1's and No. 2's what sized fish am I to expect? When I receive a quotation for small Haddocks and for larger Haddocks at a higher price, should I be satisfied with so called large Haddock which do not average 2½ pounds each? Again should any retail fish dealer be satisfied with from 10 to 15 per cent less weight than his invoice calls for and in addition pay the express charges on what he does not receive?

These questions are all of vital interest to the retailer who has been much too easy in charging up his weights.

All these questions have been brought to the attention of the C. F. A. and promises have been made to have the standardization discussed by the executive.

If they have ever discussed the matter nothing has come of their deliberations, but if the Producers, and I refer more particularly to the Atlantic Coast man, wish to build up a strong domestic demand for their goods they must give the retailer what he is justly entitled to.

To do this, it should not be necessary to have Parliamentary legislation.

Yours truly,

T. W. C. BINNS.



The Ontario Government Fish Sales Policy

STRONG PROTEST BY HUNDREDS OF
ONTARIO FISHERMAN



At the last Convention of the Canadian Fisheries Association held in Halifax in August 1918, the case of the Ontario fishermen was presented to the members and a resolution was passed by the Association "protesting against the injustice of the Ontario Government Fish Sales policy which was so detrimentally affecting the fishery interests of the Province." This resolution and many other similar protests were laid before the Hearst Government but to no avail.

With the defeat of the Government responsible for the establishment of the Fish Sales Branch, the Ontario fishermen, and the Canadian Fisheries Association co-operating in their behalf, held a meeting in January and passed a resolution petitioning the new Government to discontinue the Fish Sales Branch. A delegation waited upon the Hon. F. G. Biggs, Minister of Public Works and Fisheries, and laid the resolution and case of the fishermen before him. Mr. Biggs, being new to the office, was not au fait with the previous activities of his predecessor in the fish business, but promised a sympathetic consideration of the Ontario fishermen's petition.

In February it was announced that the new Government would continue the operation of the Fish Sales Branch, but they would not demand any of the catch of the independent fishermen. This was a concession, but the injurious principle—that of Government competition with private fishermen in the marketing of their fish—was maintained in spite of well founded arguments that such did not benefit the Ontario public and the war-time necessity for a wholesale fish distribution no longer existed.

The Canadian Fisheries Association, following up their Halifax Convention resolution in the effort to eliminate the ill-advised principle of Government operation of industry, endeavors to show the Ontario Fisheries Department a logical reason for discontinuing the Fish Sales Branch entirely and with that object, the following petition signed by over eight hundred Ontario fishermen operating in all Lake waters has been recently presented to the Provincial Government.

"THE UNDERSIGNED FISHERMEN of the PROVINCE OF ONTARIO Respectfully petition the present Government to cease commercial fishing and dealing in fish, for the following reasons:

(1) No justifiable economic or publicly beneficial reason now exists for continued Government operation of a Fish Sales Branch. As a War Measure, such Branch may have justified its existence, but with the

conclusion of hostilities, Government operation of a Fish Sales Branch constitutes unfair competition with private fishermen and dealers.

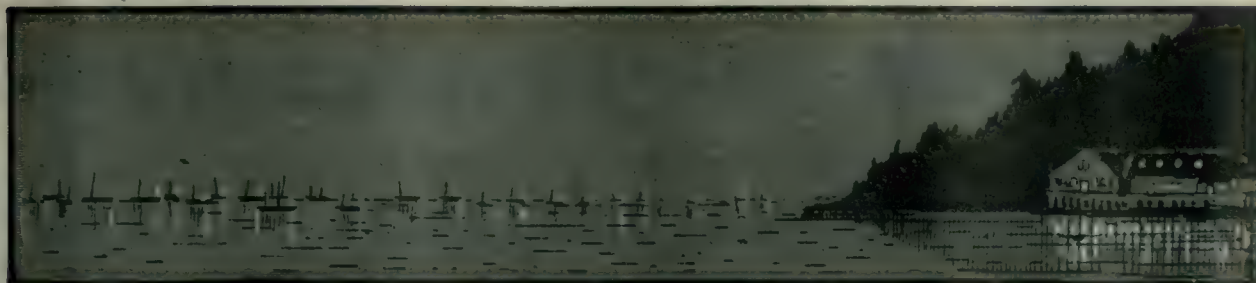
(2) The Government operation of a fishery in the virgin waters of Lake Nipigon, where fish cost very little to produce, and the marketing of such low cost fish in competition with fish produced at much higher cost by independent fishermen in the Great Lakes—said fishermen paying tolls and licenses to the Government for the privilege of fishing—creates a situation which is manifestly unfair.

(3) The consuming public of Ontario have really received no benefit from the Government Fish Sales policy. The alleged saving in the price of fish to the consumer, it will be found upon analysis, has amounted to nothing which justifies a continuation of the policy. Those who have benefitted are a few persons privileged to fish Lake Nipigon; the middle-man, who distributes the fish, and the retailer, who, with few exceptions, charges several cents per pound more than the supposed Government fixed price to the Consumer, or, who sells a few pounds to the Ontario consumer and ships large quantities to the United States market for higher prices.

(4) At the present time it has been found that the public are not taking advantage of low priced fish to reduce living costs—the demand is for the high priced and expensive varieties. The Fish Trade of Canada are in a position to fill the markets with excellent low priced fish but there is no demand for such. In view of this fact, which can be substantiated upon investigation, there can be no justification for the continuation of a Government Fish Sales Branch.

We, therefore, respectfully ask the present Government to discontinue their present Fish Sales Policy, and we feel confident that we will receive sympathetic consideration of our petition."

The Association have strong hopes that this petition will be considered and that the Ontario Government will relinquish their fish sales and distribution policy. To the fishing of Lake Nipigon as a means of revenue to the Fisheries Department, the Association takes no exception, but it is suggested that the fishery there be thrown open to tender and that the department collect a sufficient royalty from the fish caught to equalize the cost of fish produced from the other lakes where cost of production is necessarily greater.



Some Reasons Why The Pacific Salmon Fishermen Should Support An Embargo on Raw Fish



1. DIRECT BENEFITS TO THE COMMUNITY AT LARGE AS COMPARED TO WHAT THE FISHERMEN ALONE OBTAIN FROM THE PRESENT EXPORT PRIVILEGE.

During the season of 1919 the total quantity of salmon exported from District No. 1 was 88,384 cwts., or approximately 1,104,800 fish. At an average of 10 fish to the case this would produce 110,000 cases of canned salmon.

If we suppose the price paid by American buyers was 10 cents per fish more than Canadian buyers offered, the additional sum received by the fishermen would be \$110,480. This represents the total benefit the people of the Province received out of the free export of our raw fish.

The number of fishermen operating in District No. 1, in 1919 was 1,337 and to them would go the \$110,480 mentioned above. BUT OF THIS NUMBER 873 WERE JAPANESE, WHO ARE BRITISH SUBJECTS IN NAME ONLY, AND WHO SEND THEIR EARNINGS TO JAPAN INSTEAD OF using them for the development of British Columbia. The bulk of the extra price they receive for their fish is lost to the country just as much as is the fish that is exported in a raw state.

The White and Indian Fishermen of District No. 1, in 1919, numbered 464 and their share of the \$110,480, extra price paid by the Americans was \$38,342. This money stays in the country AND IT ALONE REPRESENTS THE GAIN THE PEOPLE OF CANADA RECEIVE FROM THE FREE EXPORT OF OUR RAW FISH.

On the other hand what would be spent in Canada for labour alone if these fish were canned here instead of exported to be canned in the United States by our American competitors? The figures given below are in some cases estimated but their approximate correctness can be easily verified.

4c per case tax by Dominion Government..	4,400
4c per case tax by Provincial Government..\$	4,400
30c per case tax paid in wages to White Cannery Employees	33,000
50c per case tax paid in wages to other Cannery Employees	55,000
10c per case paid for board of Cannery employees	11,000
10c per case paid for labour of can factory Employee	11,000

15c per case paid for labour of box factory Employees	16,500
Estimated earnings of labour of machine shop and other employees.....	10,000
Estimated earnings of cordwood, coal & other fuel producers	5,000
Estimated cost of freight and handling charges paid for transporting packs from canneries to Vancouver.....	10,000
Estimated total of taxes and labour earnings	\$160,300

THESE ITEMS COVER TAXES AND LABOUR EARNINGS ONLY. Nothing is shown for profits to the Cannery owners, can factory owners, sawmills, machine shops, or other supplies of the materials used in connection with canning operations, although the profits made by these various companies would largely be spent in British Columbia. It will be seen from the above that our White Fishermen benefit from the free exportation of raw fish to the extent of \$38,342, but in doing so deprive other labourers in this Province of at least \$160,300. Surely when asking the Government to limit fishing licenses for their protection our fishermen should agree to an embargo on the export of raw fish that would enable these other wage earners to share in the benefits they wish for themselves.

In District No. 3 results are harder to determine as most of the fish were taken with purse seines. Only the number of seines licensed appear in the Government returns. The actual number of men employed and their nationality is not shown, but here again it is known that THE JAPANESE LARGELY PREDOMINATE. The quantity taken by seines and gill nets combined was 1,497,915 fish. At 10 fish to the case, this would pack 149,791 cases.

On the same basis as in District No. 1 packing these 149,791 cases in British Columbia would produce for taxes and labourers alone, the sum of \$218,694.86, WHICH IS LOST TO THE PROVINCE TO-DAY. In addition we have lost the revenue the cannery owners and allied industries would derive from the business. At 10c per fish extra price received from American buyers the fishermen's gain through the free export of raw fish would be \$149,792, and from this should be deducted the portion obtained by the Japanese since their earnings like the raw fish, are shipped out of the country.

2. *THE PRICES PAID IN CANADA WOULD BE FULLY AS GOOD AS AMERICAN BUYERS CAN PAY AS SOON AS CONDITIONS BECOME STABILIZED.*

At the present time American packers put up approximately 500,000 cases more Chum salmon than the United States consumes, and this surplus is exported to foreign countries—largely to Italy, Australasia, and the Orient. Through the larger packs they put up and the cheap fish they get from their traps and seines in Alaska they can afford to offer B. C. fishermen prices which Canadian canners are unable to meet. BUT A GOOD PROPORTION OF THEIR 500,000 CASES SURPLUS IS PACKED WITH FISH CAUGHT IN BRITISH COLUMBIA WATERS. If through an embargo we prevented their securing our fish it would mean American packers could not supply foreign buyers with all their requirements, and the orders would come to Canada instead. Once we had this market in our own hands Canadian packers could pay as much for the raw materials as American packers now pay, so while for one, or possibly two years B. C. fishermen would not do as well, ultimately they would get from B. C. canners as much if not more for their fish than American buyers could offer them. This is proved by the fact that despite the embargo that exists on the exportation of Sockeye salmon the average price paid for sockeyes in B. C. is much higher than it is in the U. S. We have our share of the export trade in sockeye and when we can get our share of the export trade in Chum the results will be equally satisfactory to the fishermen as regards the prices paid them for raw fish. Scientific investigations has demonstrated that all salmon held without ice for 48 hours after being taken from the water should not be canned as they are unfit for canning purposes. Practically all the B. C. salmon bought by American buyers are shipped without ice to their destination and in nearly all cases more than 48 hours elapse before they are put in the tins. The salmon caught in their own waters are fresher when canned and are therefore much superior when put on the market.

The U. S. laws compel packers to state on the label what country the fish originated in. All the fish we sell them is put up under labels that read "British Columbia Chums (or Cohoes, or Pinks as the case may be) packed on Puget Sound." Thus a foreign buyer getting this canned salmon from them and comparing it with the American home product will condemn B. C. fish as an inferior article. We cannot expect to compete with American canned salmon until our fish is packed in Canadian waters, and when we do pack it here our reputation for Chums should exceed theirs the same as we exceed them to-day in packing Sockeyes.

3. *AMERICAN SUPPLIES OF RAW FISH ARE BECOMING EXHAUSTED. FREE EXPORT OF B.C. FISH WILL RESULT IN OUR SUPPLY BEING EXTERMINATED WHILE THEIRS IS BEING BUILT UP.*

About 75 per cent of the chum salmon caught in American waters are packed in Alaska and so strenuous have fishing operations been carried on that the authorities predict actual extermination if greater protection is not given the fish. So marked has the depletion been that some waters have already been

absolutely closed to all fishing in the hope of restoring the runs by this means, and in the February 1920 issue of the Pacific Fisherman will be found a Commission's Report recommending still further restrictions. These include not only a weekly close time of 60 hours, but additional close time in the early and last days of the duration of the runs.

By these drastic resolutions our American competitors hope to restore their fisheries. But in curtailing their fishing they are curtailing their production as well, and will thus lose control of the world's market. To avoid this they are coming to B. C. for supply and UNLESS THE EXPORT OF RAW FISH IS FORBIDDEN OUR FISHERIES WILL SHORTLY BE AS DEPLETED AS THEIRS ARE TO-DAY. Their brands and their products will continue to hold all the trade and we will be responsible for preserving this monopoly for them against the time when their own restored fisheries will give them a new supply independent of British Columbia.

The Americans cut down the forests of the Atlantic Sea-board to grind into pulp for making paper. To-day these forests are exhausted and their pulp mills dismantled and idle. They cut down the forests of Wisconsin and Minnesota to produce merchantable timber, and to-day even the water logged sticks from the river bottoms have been recovered and cut in the effort to keep their mills operating. The timber resources of the Pacific Coast were being used up so fast that their Government in alarm established large forest reserves and are spending thousands upon thousands of dollars in efforts of re-forestation—and while waiting for these supplies of their own to again become available, what are our American friends doing? They are using up the pulp and timber resources of Canada because we have no embargo on the export of these raw products, and they are holding the world's markets at our expense because we are too "penny wise and pound foolish" to protect our own interests.

We let them take our pulp wood and our timber logs; the raw product of our mines; and of our fisheries; but they put up tariff walls against our finished products, and they keep down the prices our farmers receive for hay and grains, for potatoes and other roots, for milk, butter, eggs and other farm products. They give millions of dollars each year to American labourers to work up the raw products they secure from Canada, and we Canadians let our natural industries become exhausted; our labourers be deprived of these millions in wages; and our own development become retarded because we are too blind or too selfish to see that what is good for the greatest number as best for the individual as well. Our own prosperity is but temporary if we drive our fellow citizen from the country because we are too grasping for ourselves to consider his needs. We live on each other and for each other; the canner is dependent on the fisherman; the fisherman on the net maker, the net maker on the farmer who produces the flax; the labourers for our supplying industries, in their turn, are likewise dependent upon us. We are each but links in the chain of our national life. We cannot ignore the fact that the chain's strength depends on each link remaining sound, and the labour link in the chain of Canadian prosperity must become weakened if it is worn down from the rust of non-employment through the export of our natural resources in the shape of raw materials.



FISH CURING

By J. J. COWIE



Smoked Fillets

The fillet is a strip of fresh fish which, after the skin and bones have been removed from it, it lightly smoked. It is usually made from the side part of a medium sized cod, a very large haddock, pollock, hake, cusk, or any other round fish that may be found suitable.

Filleting is what may be called one of the fine arts of fish curing, and the worker, in order to accomplish it with the necessary neatness and speed, must have a high degree of skill and practice in the use of a fish knife. The practice of filleting fish in Canada in the course of the past eight or ten years, has done much to increase the consumption of certain varieties of fish, which treated in other ways or marketed in a fresh condition were not previously very greatly in demand.

Fish can be filleted in different ways, but the method most commonly practised, and which perhaps gives the best results, may be described as follows:—

In the first place, the head and entrails are removed just as if the fish were to be split and dried in the ordinary way. Then, after washing, the fins on both the back and the front are cut out by running the point of the knife along both sides of each fin a little below the skin. The tail fin should be left to give a grip in the later skinning process. The fish should next be split, and the main bone removed.

The thin or belly part on each should then be cut away, and every small bone in the flesh of the split fish taken out. When that has been neatly and completely done the fish should be separated into two halves by running the point of the knife down the centre. Very careful splitting is necessary in order that as little flesh as possible may be left on the bone.

The skin should now be removed. It is done in this way: Place one of the separated halves on a table, skin down and hold it by the tail in the left hand, then enter the knife between the flesh and the skin, and work it forward with the edge close to the skin until the two are completely separated. The fillet thus becomes a longish piece of pure white flesh with something of a triangular shape.

The Fillets are now ready for colouring and pickling. They are not coloured entirely by smoke, however, like finnan haddies or unskinned fish. If they were hung in a smokehouse and submitted to smoke for the length of time necessary to give them sufficient colour, it would be almost impossible to prevent them from becoming so dry and hard as to be unsalable. Fillets are, therefore, colored by a harmless vegetable dye. Arnotto, or as it is commonly called, Annatto

dye, is generally used. The dye should be mixed with pure water in the proportion of about one-third of a gallon of dye to about three gallons of water. The proportion of dye may be increased in accordance with the amount of colour desired. The fillets should not be allowed to remain in the mixture. They should simply be dipped in it. After being dipped in the dye the fillets are placed in clean newly made pickle of the usual strength, and allowed to remain therein for about thirty minutes. The fillets are then placed in a smokehouse and dried, without fires, for about an hour and a half. Fires of hardwood chips and sawdust are then lit, in the smoke of which the fish are allowed to remain for about two hours. Fillets are not hooked up or spitted on rods for smoking like other fish. They are carefully and evenly laid across two or more thin steel rods. Needless to say the rods should be kept perfectly clean and free from dust. As may be judged from the lightness of the salting and smoking, fillets are cured for almost immediate consumption, and they can only be kept in good condition for any length of time in a chilled atmosphere. They are marketed in the familiar finnan haddie boxes.

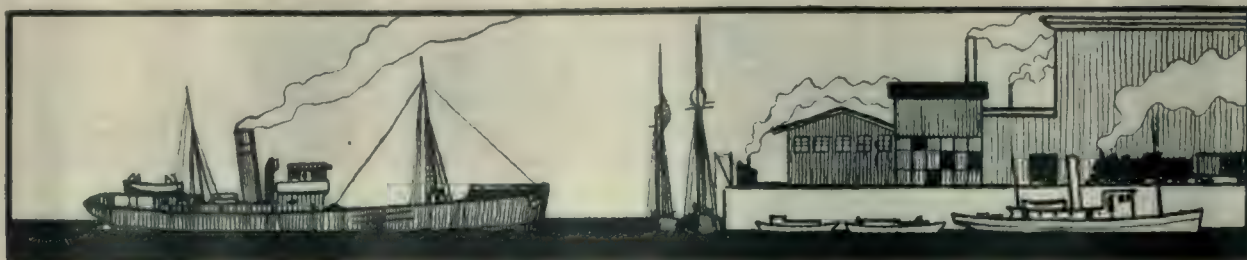
GLOUCESTER FISH LANDINGS.

January 1, 1920—February 29, 1920.

	Pounds	Pounds	Pounds
Fresh Cod	373,290	812,641	215,491
Salt Cod	1,540	115	
Halibut	477	90,678	667
Haddock	277,180	555,155	164,537
Hake	34,825	1,250	31,204
Cusk	5,795	7,492	13,684
Pollock	410,934	504,835	312,423
Flitches		85	
Not Product of U. S.			
Fisheries	822,001	2,264,512	1,418,648
	1,926,042	4,236,763	2,156,654

Frozen Herring . .		81800 lbs.
Salt Herring	2,079bbbs.	3,345bbbs. 23334bbbs.
Bulk Herring	6,801bbbs.	2,291,757 lbs.
Cured Fish	900 qtls.	3,514qtls. 937 qtls.
TOTAL: 1919—	7,626,228 lbs.	
TOTAL: 1920—	4,418,641 lbs.	

"SEE YOU IN VANCOUVER!" IS THE HIGH SIGN.



Review of the Foreign Fishery Trade of the United States

By HUGH SMITH, United States Commissioner of Fisheries



In the phenomenal development of our general foreign trade, the fisheries have played an important and unique role; and in the international adjustments now in progress or in contemplation the international movement of fishery products deserves careful consideration at the hands of the American fishery interests.

A glance at some of the historical features of the foreign fishery trade of the United States may not be inappropriate or unprofitable as an antecedent to a consideration of present and future problems.

Water products have from colonial days occupied a prominent place in our national commerce. While such products do not rank in value with the output of our farms, our forests and our mines, yet the extent of the foreign trade in these commodities is relatively large by comparison with the extent of the fishing industries.

The great abundance of fish on our shores had an important influence on the early colonization and growth of the United States; and in the early export trade of the country fishery products were very conspicuous. In 1774, one-sixth of the value of all exports represented dried cod. Thirty years later, when the country's exports totaled about \$41,500,000, cod alone amounted to \$2,400,000.

During all the early years of the republic the exports of fishery products exceeded the imports. Year after year, in an unbroken procession there was rolled up in a very substantial balance of trade, which was at its maximum in the years 1844 to 1847. It was not until the year after the Civil War that, for the first time, the balance of fishery trade turned against us and then for only a single year. In 1864 and again in 1884 the same thing happened. All these cases were due to the effect of tariff regulation on the fishery trade between the United States and Canada.

For more than 60 years after the revolution the imports of fishery products were comparatively insignificant. At no time prior to 1839 did the imports for consumption reach \$100,000. The growth of the import trade from that time on has been steady, reaching \$417,000, in 1850, \$2,685,000 in 1870, \$5,800,000 in 1890, and \$17,000,000 in 1910. In 1891 there began a definite balance of imports over exports, and this relation has continued up to the present time.

General Extent of Fishery Trade.

The total foreign fishery trade of the United States in the last pre-war year amounted to a little over \$33,000,000. The imported fishery articles had a value

of approximately \$20,000,000 and the exports were valued at \$13,000,000. These figures for 1914 may be regarded as representing the condition and extent of the trade in a normal year.

The great war wrought a material change in our fishery trade. Taking the calendar year 1918 as the culminating stage of the foreign commerce as affected by war, it appears that the value of imports of fishery products then reached \$31,910,000, while the exports amounted to \$30,435,000, a total of \$62,345,000, nearly a one hundred per cent advance over 1914.

The country on which we depend for much the largest part of the fishery products we import is Canada, which furnishes especially fresh salmon and halibut, fresh and salt cod, herring and mackerel, fresh and canned lobsters and fresh fish from the interior waters. Japan enjoys a virtual monopoly in supplying us with canned crab meat. Various countries of Western Europe, especially the Netherlands, Norway, England and Scotland send us large quantities of pickled herring and mackerel. France, Portugal and Norway cater particularly to our demand for sardines and sprats canned in oil.

The countries which are the chief consumers of our exports of fishery products are Canada for miscellaneous fresh fish; Cuba, Haiti and San Domingo for salted cod; England, Canada, Australia, Brazil and the Philippine Islands for canned salmon, and England and Canada for oysters.

Fishery Import Trade

Notwithstanding the wonderful development of our matchless fishery resources, it has been necessary largely to supplement the domestic production, and we have in recent times been going far and wide for food and other commodities derived from the waters.

The principal part of this import trade is in articles which are yielded by our own waters but are not now taken in sufficient quantities to meet the demand. A part of this trade is induced by the firmly established tastes and special needs of our foreign-born population. An anomalous feature which in time will doubtless be corrected, is the importation, often from remote places and at great expense, of products that are afforded by our local waters, but are either not now caught or are not prepared in the particular form in which the foreign markets provide them and in which our consumers demand them. A curious instance of roundabout practices in our fish trade is seen in the importation for the large oriental population of San Francisco, Seattle, New York and Boston of dried

squid from China, much of it exported thence from Japan, whereas the local American waters abound with the same kind of creatures. Another case of this kind was the former importation from Germany of agar-agar made in Japan from the identical species of seaweed that occur on both our Atlantic and Pacific coasts.

Surveying the situation in 1914 as affording the best criterion of normal conditions, we find that fresh fish constitute one of the most valuable classes of fishery imports. An overwhelming proportion of these fresh fish naturally come from Canada, with small quantities from England, Mexico and Newfoundland. Fresh fish entering the United States from abroad in 1914 aggregated about 70,000,000 pounds, worth over \$3,130,000, of which 66,600,000 pounds, worth over \$3,000,000, come from Canada. Under the stimulus of the "eat more fish" campaigns conducted throughout the United States in connection with the war, the consumption of both domestic and imported fish greatly increased, and in the calendar year 1918 there were brought to our markets from abroad upward of 110,870,000 pounds of fresh fish, having a value of \$8,810,000. Canada contributing about 100,000,000 pounds of this amount.

Cured cod and other fish of the cod family are extensively imported from Canada, Newfoundland and western Europe. The quantity arriving in 1914 was more than 40,000,000 pounds valued at over \$2,000,000. By far the largest consignments came from Canada, but Denmark, Norway, The Netherlands and Newfoundland sent considerable shipments. Under the unusual conditions prevailing in 1918, the receipts of this class of fish increased to \$84,800,000 pounds, worth \$7,100,000. Importations from Europe almost entirely disappeared, but Japan, attracted by the high prices, sent 1,650,000 pounds of salted cod to our market.

Pickled sea herring is one of the more important and popular of the imported fishery products. A very extensive trade is carried on with western Europe and Canada, and in 1914 the total receipts exceeded 100,000,000 pounds, valued at \$3,600,000. The largest supply aggregating 29,640,000 pounds and valued at \$1,236,000, came from Scotland, followed by The Netherlands, Canada and Norway. During the war the receipts from Europe declined and their place was partly taken by increased shipments from Canada and Newfoundland, particularly the latter.

Since the sudden decline in the American mackerel fishery beginning in 1887, all other producing countries on the Atlantic seaboard have been called on to supply our demand for salted mackerel. The imports of mackerel in 1914 were upward of 31,000 pounds of salt fish, valued at \$1,720,000, Norway, Sweden, England, Ireland and Canada being the principal countries of export.

In the realm of canned products, France, Portugal and Norway have been the chief contributors of sardines, Japan of crab meat, and Canada of lobsters. In 1918, both crab meat and lobster imports had a higher value than in any year prior to the war, but the receipts of fish canned in oil, that in 1914 were valued at more than \$3,000,000 from European countries, fell away to barely \$100,000. Canned spiny lobsters or rock lobsters from British South Africa figured rather largely in the import returns in pre-war years and may be expected to resume their place with the return of normal industrial conditions.

Of the remaining fishery products that enter prominently into our import trade, mention may be made of fresh lobsters, of which many million pounds come from Canada; fresh spiny lobsters, entering the California markets from Mexico, and cod-liver oil and other fish oils coming chiefly from Norway, Canada and Newfoundland.

Features of the Export Trade

In pre-war times, our exports of miscellaneous fresh fish were for the most part negligible. In 1914, we sent about 5,000,000 pounds of fresh fish to Canada, mostly from Alaska and Washington, 855,000 pounds to Cuba and 340,000 pounds to Germany, the total shipments being about 6,500,000 pounds, valued at \$366,000. In 1918 this trade increased to nearly 9,000,000 pounds, valued at \$832,000, and the leading feature of the increase was the shipment of over 2,000,000 pounds to England.

Among the most widely distributed of our fishery exports are the dried cod and other "ground fish," product of the New England and Alaskan fisheries. These go to all continents, but the trade is by far most important with the countries of North and South America, and it is to these same countries that we must look for encouragement in the growth of this particular branch of the fishery trade. Of a total of 5,156,000 pounds of such fish exported in 1914, valued at \$395,000, North America took 2,900,000 pounds and South America 1,300,000 pounds. Our best markets are Cuba, Haiti, San Domingo and Brazil; but practically every other country south of the United States is perpetually hungry for this kind of preserved fish, and naturally looks to us to supply all or a large part of that demand. The fact that we have not in recent years played a prominent role in this respect may be explained by the active demand in the home markets and by our failure to seize the opportunity for competing with other countries that produce relatively or actually larger quantities of such fish than we do. In the industrial readjustments now in progress, we should not lose sight of this ready market for our surplus fish, especially the less fancy grades that may be in less demand at home, and we should consider the possibility of diverting to this Central and South American market, from both the Atlantic and Pacific coasts, large quantities of comparatively neglected fish with which it should be entirely feasible to build up a large business by employing proper methods of advertising and by adapting the prepared product to the local needs and preferences.

It seems likely that the North and South American markets for this kind of fish, which has been supplied to a considerable extent from the fisheries of western Europe, will be unable for some years at least to secure from that source the same supplies as heretofore, owing to the more insistent demand in Europe itself.

The marked augmentation of this trade during the war, while, of course, purely the result of temporary and abnormal conditions, indicates the possibilities to which our producers and shippers may aspire. Thus, in 1918, the exports of crude cod, haddock, hake, and pollock, aggregated 31,400,000 pounds, worth \$4,221,000. A prominent factor in this increase was the consignment of more than 13,000,000 pounds to Italy; but various countries of Central and South America took

larger supplies from us than formerly, presumably because other sources were cut off or impaired, and Cuba increased her consumption more than ten times over 1914.

By far the largest fish item in our export trade is canned salmon, which, owing to its excellence and to the convenience with which it may be handled, is not only the most widely distributed of all American fishery products, but is, no doubt more generally known and used than any other product of the waters of the world. The direct exportation reaches practically every coastwise country: the subsequent distribution is to the most remote parts of all countries, civilized and uncivilized.

In 1914 the exports of canned salmon aggregated 87,750,000 pounds valued at \$7,999,000. This movement represented in value 62 per cent of our total export trade in fishery products. Important markets were Canada, Chile, British East Indies, Australia and the Philippine Islands, but England alone absorbed 75 per cent of the shipments, and that country has always been the chief foreign consumer of canned salmon. In 1918 the volume of this trade increased only 5 per cent over 1914, but the value of the commodity increased more than 60 per cent, and large shipments were made to France and Italy—countries which in normal times consume only a negligible quantity of canned salmon. In view of high prices at home, high rates of ocean transport and a reduced pack, the exportation of canned salmon in 1920 may show a decided falling off.

In former years there was an extensive export trade with Germany in frozen salmon from the Pacific coast. During the five years preceding the outbreak of the war the value of these exports averaged \$1,810,000 per annum, reaching \$2,195,000 in 1914, of which amount Germany is to be credited with \$1,837,000. Other countries of Europe, together with North America, South America, Asia, Africa and Oceania, formerly took small quantities of frozen salmon, but this trade has been largely dissipated and, so far as Germany is concerned, will hardly be re-established in many years.

The exports of canned fish other than salmon have always been of minor importance and in 1914 amounted to only \$118,000, chiefly to Canada, Mexico, Brazil and the Philippines. During the war this class of exports took a tremendous spurt, and in 1918 exceeded \$8,600,000. Countries partaking liberally of these goods were France, \$184,000; England, \$3,323,000; Canada, \$176,000; Mexico, \$397,000; Cuba, \$865,000; Argentina, \$323,000; Peru, \$104,000; Australia, \$342,000; and Philippines, \$1,800,000. Various countries in all the continents, under the stress of war conditions, became more familiar than ever before with American canned fish besides salmon, and the way has thus been paved for a continuance and extension of this branch of our export trade.

Out of the plentitude of its oyster crop the United States has for years maintained a foreign trade in fresh oysters, particularly with England and Canada. The value of oyster exports in 1914 was about \$666,000, which was about the average of the recent pre-war years. During the war, this business declined and practically disappeared so far as Europe was concerned, and in 1918 amounted to \$413,000. Canada, Mexico, Argentina, and Australia being the chief markets. The exports of all other shellfish, consisting principally of shrimp, were valued at \$323,000 in 1914,

with Canada, Cuba and Brazil taking the largest share, while in 1918 this trade increased to over \$1,000,000, with England as the leading consumer.

In connection with the extension of our foreign trade in fishery products, it is only fitting that cognizance should be taken of the efficiently organized, admirably equipped and zealous staff of consular officers, commercial attaches, and foreign trade representatives of the United States abroad who may confidently be relied on to supply information that will conduce to the increase of our exports to markets that will yield the best results and will enable our fishery interests to occupy desirable trade fields from which our lack of knowledge and foresight formerly excluded us.

At the risk of perpetrating a truism, the opinion is expressed, that in the further development of our foreign fishery trade, it will be the part of wisdom not generally to import those products that are obtainable in sufficient quantity in our own waters and not generally to export those for which there is a domestic need.

FRENCH FISHERY NEWS

The "Patrie"—largest trawler in the world, 200 ft. in length with a fish capacity of 750 tons and accommodation for 40 and 50 men—was launched recently in England for French owners.

The large French trawler "Normandie" which attempted to do a winter fishing season off the Iceland Coast has come back to Fécamp (France) with only 100 cwts of Codfish.

Two other trawlers of that harbor "Provence" and "Champagne" who went out of Fécamp in January are not making expenses. Codfish is scarce in France.

Paris, March 13.—The high cost of fish has ramped the ardor of Lenten observers in Paris. Ordinary salt cod, which figured prominently as the regular dish for Lenten Wednesdays and Fridays when it was only 1 franc 50 centimes (30 cents normally), now costs 4 francs 50, the same price as lamb. Mullet are 7 francs and salmon 15 other varieties ranging in price similarly.

The steam trawler Mount Kemmel, which was built by Messrs. A. Hall and Co., Ltd., shipbuilders, Aberdeen has left Aberdeen for the Tyne en route for France. The Mount Kemmel is one of a fleet of vessels built in Aberdeen for a French Trawling Coy. These vessels are intended for fishing off the Newfoundland coast and are in consequence of a larger type than trawlers operating in home waters.

The vessel is registered in the highest class at Lloyd's and is of the following dimensions—Length B.P. 170 ft.; breadth, 27 ft.; depth, 15ft. 6ins. She is completely fitted up with electric light and has an extra large fish hold and bunkers. There is accommodation amidships for the captain, officers and staff of engineers, while the crew number 40 all told and are to be berthed forward and aft.



ON THE MACKEREL TRAILS

A GOVERNMENT SCOUT SHIP WOULD HELP TO BUILD
UP CANADIAN MACKEREL FISHERY

By M. H. NICKERSON



Every live government is at present endowing one of its branches to prosecute the study of marine life according to scientific rules. This course busies itself chiefly with anatomizing on food fish. It is no doubt a fascinating line of research; but it is evident that business and science might go hand in hand on their beneficent journey if more pains were taken to note the habits and periodic movements of the most valuable species of fish, rather than dissect the specimens. The hunter is keen to strike the trail, not to count the bones of the game. Mrs. Partington's recipe for rabbit stew yet holds good: "First catch the rabbit."

A notable phenomenon is the spring migration of mackerel to the Northern spawning ground. It sweeps along the Maritime Province coast waters quite regularly every year. Yet science takes no heed; official heads let it slide, as the slang goes; the fisherman alone have any working knowledge of it and their range of observation is necessarily limited. It is incumbent on the Canadian naval department, especially at a time when lobstering has been curtailed by order-in-council, to launch a system of discovery as to the direction taken by the migratory schools of mackerel, in order that the fisherman may be kept well posted and increase their catches in consequences.

The principal Northward stream of those fish (consisting of schools more or less scattered and occasionally splitting apart, to re-make in a main body subsequently) follow a tolerably straight course, from their winter haunts beyond Hatteras, along the stretch of sandy beaches till nearing Nantucket Shoals, which spot may be said to mark the parting of the ways. For while the bulk of the rafts usually swings through the South Channel, skirting the New England shore at a distance, then turning toward the Cape Shore by what is termed the inside route, at other times the track lies South of George's Bank principally, making more of a bee-line for the broadside of Nova Scotia—so to speak—and showing up at different points for the first time anywhere from Sambro to Canso, though sporadic schools may appear farther west later in the season, sometimes trimming the shore closely, sometimes giving it a wide berth. The cause of this deviation has never been ascertained. It was once thought to be occasioned by the prevailing winds, especially the continuance of

Northeasterly gales. That opinion has been disproved. Again it was claimed that the red-feed, or whatever the mackerel subsisted on while migrating, lured them out of the direct road. But since nobody knew much about red-feed, or what the fish did find for forage on the way, that idea has also gone to the discard. Anyhow this particular phase of the subject was a fruitless field of enquiry; seeing that the most exact knowledge in regard to it could no more influence the course of the mackerel than the weather bureau can change the climate.

Something worth far more than tons of conjecture could be attained by detailing a patrol boat to watch the schools in their Northern progress and give timely notice thereof to the seiners and net-drifters of the Maritime Provinces. The scouting would begin shortly after the American seiners, having wound up the Southern cruise, would be fitting in the home ports for the Cape Shore trips which are to follow soon. That would be the golden opportunity for the provincial boats of the larger size, which would be on the look-out to catch the report from the scout boat sent by wireless to the radiostations at Cape Sable, Camperdown or Glace Bay, as the case might require. In working Eastward, a call of the sea, in fact, relayed over the land-lines or telephoned to the localities where the drifters would lie in waiting, and they would accordingly make a start knowing to a certainty just where and when they could ambuscade the schools and make a profitable scoop. All in the calling would thus be enabled to reap the advantage. It would be a novel method, but the most effective marine intelligence bureau extant.

It is earnestly hoped that the order may go forth to begin the 'proposed' service during the present spring. The scheme has already been outlined and submitted to official consideration, which can scarcely be other than favorable. It is not in the nature of a nature of a fantastic and costly experiment, with an outcome ever in doubt. The government may have a spare boat in its service which could be commissioned for the purpose without delay. No special equipment is required except wireless, which I suppose is on all naval vessels of any size. No great power would be needed, as the receiving stations would never be more than fifty miles away. A chain

of accurate observation in one important branch of the fisheries could thus be carried around the whole coast from Briar Island to Cape North, and farther up the Gulf if necessary. Nothing so feasible or so full of promise for the general benefit has ever been broached in this regard. Its chief merit is that Canadian fishermen would share its advantages exclusive of the American fleet which would be temporarily withdrawn as already remarked. When they did appear on the scene, they would lack the notice sent out to provincial netters in readiness to make a seaward sally as soon as they got the news how the schools were heading.

Net drifting for mackerel in Nova Scotia waters is becoming a regular calling, despite its drawbacks. Last spring a numerous fleet operated in the South Shore, and by all accounts the force will be more than doubled this season. As it is, the sets are made by guess-work, and no one can tell whether he is going to strike the pay streak or not. This would no longer be the case if a watch-boat were on duty to give notice of the locality and trend of the schools. But the boat would never flush those schools or turn them from their course, just keeping slightly in advance and making daily reports. The scouting would have to begin before the close of the lobster season for the West, and the boat would do good service by operating off-shore, in a line easily reached by netters with motor-power, which would avoid the damage caused last year to the lobster-men by the inshore drifters fouling with the buoys. Besides the mackerel traps at this period are put down in bays and roadsteads, near the ordinary grounds for the moored nets, and the pathway to these should be left unobstructed, so that all parties shall have a fair field.

All things considered we may reasonably expect a trial trip will be ordered. The patrol might go on duty not later than the tenth of May. The first locating would be on a wide beat between Brown's and Cashe's, gradually narrowing down as the Nova Scotia coast was approached. Even if no marked increase catch should follow the initial venture, there would be no outlay, no loss of any kind, while it would surely add a most entertaining chapter to the vast accumulation of marine scientific facts; and it would be a matter of national pride, as well as ultimate popular gain, should Canada write the headlines of that chapter in large characters, perhaps furnish the full contents.

FISH LEATHER.

We have recently seen samples of leather made from the skins of sharks, dog-fish and rays, and without a doubt it is wonderful material. There is absolutely nothing in the appearance of the leather to indicate its marine origin and the tanned samples which we examined range from a tough sole and boot leather to a material as fine and as soft as chamois.

Fishing for sea-leather is carried on in southern waters where sharks and giant rays are more numerous than in the waters of our Northern coasts. It is possible, however, that shark fishing might be carried on by Canadian fishermen in certain localities during the summer months. At certain seasons the fishing grounds seem to be swarming with "blue dogs" and ground sharks.

CANADIAN FISHERY STATISTICS FOR JANUARY 1920.

ishing operations on the Atlantic coast were very greatly interrupted during the month of January by unusually cold and stormy weather. Consequently, the results, as a whole, are not quite equal to those for the same month last year, which, however, had the advantage of very favourable weather conditions.

The aggregate catch of cod, haddock, hake, and pollock, amounted to 30,000 cwts. against 34,500 cwts. in January last year. The smelt fishery resulted in a catch of 28,000 cwts. against one of 25,000 cwts. last year.

Owing to the extreme cold, not more than 338 barrels of scallop were taken from the beds of Chester Bay in the course of the month, whereas, in the corresponding period last year 2392 barrels were taken.

The lobster fishery opened, in the Counties of Charlotte and St. John, N. B. on the 15th November last, and in the other Bay of Fundy counties from Albert, N. B. to Annapolis, N. S. on the 15th of January. The total catch at the end of January amounted to 5,630 cwts. against 3271 cwts. for the same period last year. The whole catch was shipped for consumption, fresh.

The weather on the Pacific coast during January, was generally cold and windy. The quantity of fish landed in British Columbia, however, was very satisfactory. About the same quantity of halibut was taken as in January last year, viz:—9500 cwts. by Canadian and American boats.

Herring was in great abundance in the Nanaimo and Alberni and Clayoquot districts, and the total catch amounted to 360,600 cwts. against 75,200 cwts. for January, 1919.

The total value of seafish at the point of landing on both coasts was \$962,840, against \$608,256, for the same month in the preceding year. The increased value is mainly due to the greatly increased herring catch in British Columbia.

PORTO RICO FISH MARKET

(Reported by A. Escudero & Co., San Juan.)

March 10.—Our market is in better condition at this writing and higher prices are expected on next week arrivals.

On today's market and for strictly superior fish, we quote:—

Large Codfish	\$53	per cask of 448 lb. net.
Medium "	49	" " " " " "
Small "	48	" " " " " "
Pollock & Haddock . . .	40	" " " " " "
Cusk	38	" " " " " "
Hake	30	" " " " " "

Split Hgs. \$9 to \$10 per barrel of 200 lbs. net.

Dry Salted Split Hgs. \$17 per case of 200 lbs. net.

Bloaters \$1.50 to \$1.60 per box of 25—30 lbs. Gross.

Quotations are figured ex-dock or warehouse.

WHEN President Wilson was coming over on the SS. George Washington, and found she had a French chef, Swedish sailors and Irish officers, he never felt homesick a bit. It was just like being in America.

"When water becomes ice," asked the teacher, "what is the great change that takes place?"

"The greatest change, ma'am," said the little boy, "is the change in price."



The Fisheries of the Gaspé Coast

NEGLECTED QUEBEC FISHERY
RESOURCES CAPABLE OF
VAST EXPANSION

By Hon. Frank Carrel, M.L.C.



The following article is part of an account of a tour of the Gaspé Coast made by Mr. Carrel during the summer of 1919:—

The fishermen along the shores of Gaspé are really cod fishermen as this is the principal species caught during the whole summer, from the first days of June until the end of October, and sometimes in a mild fall season, like that of last year, even as late as Christmas and New Year. His work is considered hazardous and irregular. In many instances he is half farmer, owning a small piece of land near or back from the shore. If the latter, he spends the week days with his fishing boat and tackle on the beach and his weekends at home with his family. Some of the fishermen live in small hamlets in the mountains probably five or six miles away from their fishing grounds. After six days and nights of fishing with an interval of a few hours or so in between for sleep which might be in their chambre de barge (a small covered compartment in the forepart of their smack) just large enough to hold a small stove and two bunks and only about three feet high. Life is all much the same to cod fishermen. He starts about eight o'clock in the evening after supper in his own shack by the beach or, that of the company he is working for, which gives him a bunk, heat, light and a place to call home, when he has a few hours ashore, for \$4.00 per month. With his companion, for boats are invariably manned by two, they motor a few miles out and set their nets for herring, mackerel, squid, etc. While drifting, the crew takes turns at a few hours sleep. When sufficient bait has been taken on board it is probably about two or three o'clock in the morning when they start their gas engines, if the wind is not favorable, and head for their fishing grounds from five to ten miles further seaward. Here they anchor and throw out four lines, consisting of a thick cord of a quarter of an inch in diameter, about one hundred and eighty feet in length with a lead weighing two and a half to four pounds. On these lines are four hooks with bait weighing a quarter of a pound. If fishing is good these men keep up a steady toil of pulling in first one line, then another, with one or two cod on each. If the bait is plentiful his chances of a large catch is so much enhanced, but the bait was very scarce during our visit, in fact, so much so, that the fishermen frequently had to return to shore, and if the tide was falling they would hunt for clams, a substitute for sea bait. Oftentimes it meant a lost day for the fishermen. Then there is a great deal of luck about fishing. In the inspection of a day's catch of a number of

boats returning to shore about six o'clock in the evening the comparison of catches was very interesting. We counted over six hundred cod in one boat, while the other one had about one hundred and fifty. In the large catch was a mackerel, several cod weighing over thirty pounds and one of seventy pounds. This catch averaged 5½ drafts at \$4.20 per draft, and two dollars or ten cents per pound for the mackerel, netted these two fishermen for their day's labor over \$24.00, not at all bad for a day's work. This is of course the exception. The fish is handed over to a local fish establishment, which has a crew of fish cleaners who immediately start to work to decapitate the fish and clean them. Everything is thrown away but the livers which are a valuable by-product and which are beginning to bring a good price on the coast. The cod liver oil refinery which is operated by Mr. M. Wick at L'Anse à Beaufils, is now making a specialty of this product which in time promises to rival some of the large oil refineries in Norway and Sweden. During our visit the prices of good fat healthy livers was raised fifty per cent.

Gamblers.

The fisherman is a born gambler, not the kind we meet in cities, on race tracks or other places, but he gambles with nature and storms and the running of fish. Besides they are simple and very superstitious, like most men who live by and on the sea, some even lose their nerve, like men who have been in a bad auto smash, and will not take a chance in going out in threatening weather when the remainder of the men, with more grit, are prepared to face the elements at all times and in all sorts of weather, excepting the very worst, when fishing is out of all questions.

Wherever there is a good bay, anse or barrachois, which is a sand bar across a bay, there you will find a fishing fleet, perhaps a wharf, not repaired since the terrible devastating storm, of three years ago, a good general store generally conducted by a fishing firm or, company, who buy and trade with the fishermen who use the company's boats or their own. These boats now cost with a gasoline motor about four or five hundred dollars. In the olden days before the railway was constructed and before there was anything like a coast steamer service, the fishing business was entirely owned and controlled by Jersey fishing companies, who sold most of their fish to European markets. The first fishermen were brought out under long years of apprenticeship or indenture. It was of course to the interest of these firms to keep their men in ignorance of things outside of the coast which

to-day probably accounts for the large number of old residents, who have not yet seen a big city. It was another reason for not allowing the men to bring out their families and marrying in Canada. With their dearest family ties in the Channel Islands, the fishermen never had thought or desire for more than temporary settlement on the coast, and always lived with the hope of one day accumulating sufficient fortune to return to their families. Whether many of them ever realized this dream is problematical if one thinks of the small wage remuneration which was in vogue at the time.

How Gaspé is Changing.

But things have changed; the old conditions could not go on forever. The world was moving and the evolution of things was bringing about many changes on the Gaspé Coast, and with it came education and extensive agricultural development. It produced a larger inland population, who found the land fertile and productive with the result that little independent

of Nova Scotia, and with the new blood came new methods of doing business, which may be seen in the fine new general stores of Robin, Jones and Whitman, all of which have been built since 1900. A number of them, especially at a Paspébiac, is as modernly constructed and operated as any up-to-date store, with its cash trolley system glass counters, and electric lights. Then came the American firm of Gorton Pew & Co., of Gloucester, who have arrived within the past two or three years. But the latest to arrive is an American fisherman with a modern net system for catching mackerel, and a Norwegian expert in the person of Mr. M. Wick, whom we have already mentioned. The latter is developing many new and up-to-date uses for fish by-products, in the way of boneless fish, refined cod liver oil, and canned lobster, and salmon, which are bound to increase the natural assets of the coast, by many hundreds of thousands of dollars. It has been even hinted that he will soon be supplying bait to the fishermen, to avoid their losing so much



Percé, Gaspe County, Quebec—A Pretty, But Neglected Fishing Port.

villages sprang up, the forests were cleared and there was more general business and trade among the people. Then came a steamship service, followed by the toot of the steam engine and with it, outsiders began to arrive and see the wonderful possibilities of the coast. Many of the head men of the old firms went into business for themselves, and became competitors of the old firms and the fishermen quickly benefitted by this competition. Canadian travellers and Canadian goods began to make their appearance and a new atmosphere of trade followed. The Gaspé fish began to find its way into Canadian and American markets. Then came the Maritime and American fishing firms. Some of the very old firms disappeared in this era of progress, while others joined forces with the newcomers and to-day one sees the firm of Robins, one of the oldest on the coast, in partnership with Jones and Whitman,

valuable time during the summer months searching for it, especially when it is scarce. He will have a specially built coastal steamer which will go among the fishing boats supplying those who have been unlucky in their bait catch during the previous night. Mr. Wick has done much to educate the people as to the value of fresh fish and modern treatment of same from the time it leaves the water until it reaches the consumers' table. He has established a number of agents on the coast, whom he personally visits and imparts instruction to.

Quebec is Gaspé's Natural Fish Market.

All these innovations mean much for the people of the coast in the future development of their principal industry, and one thing certain, the Gaspé coast can produce one hundred times as much fish as it is doing at the present time, and it is to be hoped that all local

interests, including the transportation companies and the Government will work together to bring this about. Gaspé is several hundred miles closer to the cities of Montreal and Quebec, than the Maritime Province fish-exporting ports and is consequently the natural fishing grounds of these cities and their suburban towns and villages. At the present time the fish business is being transacted in too small a way. It must be increased, that is to say, there should be sufficient fresh fish caught on the Gaspé Coast every day to fill one or two express refrigerator cars which should be landed in either of the two big provincial cities every morning. If this were done millions of pounds of the most delicious sea food would be served on our tables and thus make a considerable reduction in the cost of living for our people. But to do this there must be some initiative spirit and perhaps this could be brought about by the formation of a coast-wide board of trade or fishing organization. If this is ever consummated it will require more than one or two cars every day. Instead, it will take many carloads to supply the people of the New England State, including the large nearby American cities. This is another means of helping to develop Canada's natural resources which should receive much more encouragement from our government, than it has in the past. But it is not too late for this aid to be forthcoming. The fishermen of the coasts have been sadly neglected of late years, and their wharves and harbors, are in a disgraceful condition.

How Gaspé's Natural Resources are Neglected.

When one thinks of the millions of dollars the Government has spent in building up unnatural Canadian industries which have only helped to enrich promoters at the expense of the general public, one is surprised at the apathy of the Government towards the development of the fishing trade on the Gaspé coast. Far worse is the after conditions of this unwise political policy, for it has done more to kill honest industry than anything else and has indirectly attracted over six hundred branches of American factories to this country, which may be a welcome sign in its way, but it is virtually handing over our manufacturing interests to Americans, because the profits of all these institutions and the higher positions which they offer, will, for all time to come, be filled by Americans. Here on the coast one sees the greatest opportunities for the development of an enormous fishing trade which would become a life-long asset to our country and help to reduce the depreciated Canadian dollar in the United States, left to shift for itself, with the result that the little shelter harbors are filling up with sand, the wharves are decaying and if the Government does not immediately come to the rescue, our opportunity of natural development of the fishing industry at this point, in Canada, will be merely used by the Americans to gather up our fish and transport it to American ports, and there make profits that would otherwise accrue to Canada. What is being permitted throughout Canada will eventually kill the very best industrial interests in this country. Such a state is being fostered through apathy and neglect in Gaspé, and this is one of the reasons why we are determined to leave no stone unturned to place Gaspé's reasonable appeal for help before the Government, with the hope that this fishing industry will be retained with all its profits and its labor for Canadians. If a change

is not forthcoming the present condition of affairs will ultimately drive our Canadian companies out of the field entirely. Watch American factories build in Canada to compete with our watered stock companies and the end is not difficult to foreshadow. What is the result of this American industrial development in Canada? Our politicians and multi-millionaires who have made their millions in this unwise policy will tell you that we should welcome with open arms these new industries. This is quite true but at what a cost! Canada is too close to the United States to ever force any of those men who come to Canada as heads of those concerns to ever make a change of citizenship and certainly the profits of these concerns will not long remain in Canada. This movement has been going on for the past twenty-five or fifty years, but it has assumed a more aggressive form of late. Now, while our politicians are going to reason things out in this direction there will be little heard of the poor fishermen of the Gaspé coast who are among Canada's most loyal Canadians developing and enriching this country by several millions of dollars every year, with their fish catches. Let us look at the Government's neglect of the deserving fishermen of Percé, one of the prettiest spots and although a fishing village of over fifteen hundred inhabitants and one hundred and twenty boats. It is nine miles from a railway station and for the past few years has had little or no boat service. Three years ago a storm broke away four hundred feet of a very badly constructed wharf of a total length of seven hundred feet. Now, instead of the Government immediately going to the aid of this village and quickly repairing and constructing its destroyed wharf which made a little harbor of refuge for its fishing fleet, nothing was done. No boat with any draught is able to moor at it and in consequence, all incoming and out-going freight, by water, has to be taken off or on with lighters, adding considerably to the cost of everything not to speak of the inconvenience and the loss of time which has to be made in order to carry on this trade.

L'Anse au Beaufils, which might resemble any of the European fishing coves, is a snug artificial harbor, the mouth of which is filled up with sand. All that is wanted is a dredge for a few days work and yet it is not certain if the Government will allow a nearby dredge to do this work in time to be of any use this season. In a storm the poor fishermen make for this harbor for shelter, but can only enter during high tide. The wharf inside is so disintegrating and falling to pieces caused by the inroads of destructive worms. All the heavy timber is showing signs of complete decay and ruin, and no heed is being paid to the earnest prayers of the lonely fishermen. There are innumerable other places in similar neglect and it is a crying shame to see all this going on when the Government is appealing to Canadians to develop Canada's resources. Here is one, a most important one, awaiting a little financial help, a mere bagatelle in comparison to its vast importance to the country at large.

EXPLAINED.

"That aviator is always kicking about his engine! I wonder why?"

"I suppose that is what makes him soar."



FISH FACTS AND FANCIES

A PAGE FOR THE RETAIL FISH DEALER

By THE DREAMER



RETAIL SALESMEN ARE INVITED TO SEND IN PARAGRAPHS ON MATTERS PERTAINING TO THEIR THEIR SECTION OF THE INDUSTRY.

Montreal, March 20.—Lent is nearing the Grand Finale and some dealers report a slow season. This is, no doubt, due to the lack of support of the Fish Section of the Food Board in short lack of Advertising. The fish trade is now "paddling its own canoe," and the quicker the Fish Dealers' Association and the C. F. A. and all others realize this to the full extent, the trade is going to lose by it. Pioneer Work has still to be done all over—a good line of advertising "Dope" should be got out and followed up. There are unlimited chances to talk Fish in the Press, and we have got the right article to talk about and the Public should not be kept in the dark for any length of time on this great nation wide subject of "Eat More Fish."

One notices that sugar, the most staple article of the world's household, has to be advertised. However, the "Fish Heads" and those who profess to be "Fish Heads" can ever expect to create even an impression with their "wares" without a good up-to-date line of advertising is beyond any comprehension.

The majority of Fish advertising today is misleading. We see Gaspé Salmon advertised at 32c lb. knowing that the Gaspé should be spelt "Cohoe." Also Fresh "Portland" Haddock at 10c lb. Are we not possessors of a place where just as good, and better, haddock come from? Lockport,—St. Andrews,—Halifax,—Canso,—etc., etc., and these places are in Canada too!

Regarding Fish and Fisheries, we have something to boast and even shout about. Are we too small or too modest to make a noise? We would not have to mislead the Public and would make the Trade a six-day a week affair instead of the one day which it sure will roll back to, if nothing is done. It is hoped at the next meeting of the Fish Dealers' Association this will be given a fair consideration.

The Montreal Fish Dealers' Association are to petition the City Food Department for the appointment of a "Fish Inspector," claiming that a lot of "Ripe" goods are "put over" which is against the well being of the Profession.

What becomes of all the Haddock and Cod Roes of our Canadian fish?

Mr. Producer—there is a big demand for this delicate little article. A word to the wise—I hope—is sufficient.

It has been suggested that if the C.F.A. delegates have a few moments to spare while wending their way West to the Convention that our friends the producers pass a universal resolution to amputate the head of a steak cod about a foot nearer the tail and also to remove the sound, etc., from the bone. In other words give the dealer a little more show on steak cod.

Some dealers say that they figure a loss on lots of steak cod, owing to the lack of "Steak," and also the neck portion deteriorating too quick owing to sound not being removed.

Some trade in halibut this season and the Pork Packers had to abandon their pork and beans and "Butt" in on it. This is another suggestion for the C. F. A. to consider.

Today is a day of specialists sooner or later—the sooner the better—for the ever patient public. We will perhaps have sufficient fish markets.

PROTECTION ON LAKES.

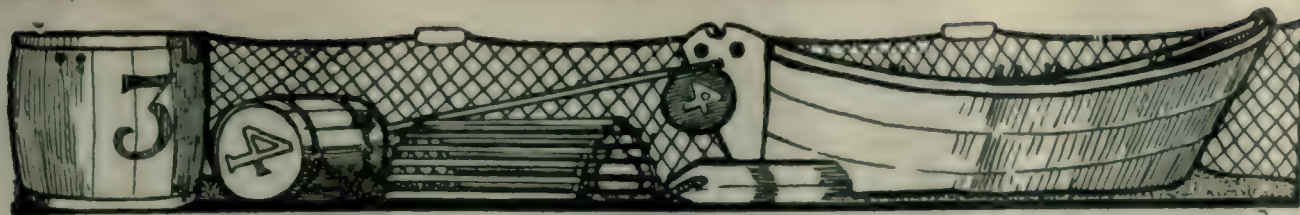
Three Tugs to do Police Duty on Lake Erie.

Ottawa, March 8.—Arrangements have been completed by the Department on Naval Services to take over three tugs, which are to be placed in Lake Erie for the purpose of protecting Canadian waters against invasion by United States craft. These craft, formerly used in dredging operations, are splendidly adapted for this protection work.

Mr. A. S. Brown, president of the Lake Erie Fishermen's Association and Capt. P. S. Robertson, a prominent member, were in Ottawa a few days ago regarding the new protection service. They expressed themselves as being greatly pleased with the announcement of the new arrangements. This protection work was formerly done by the Vigilant, which has been taken out of the service and will be sold.

NEW LOBSTER CANNERIES

Ottawa, February 27.—Information received by the Naval Department indicates that three new lobster canneries may be operated during the coming season along the northwestern coast of Nova Scotia. They will be located at Pompquit Ferry, Monds Head and the canal south side of Harbour, Harbour Road.



Prince Edward Island Fisheries



The value of the fisheries of Prince Edward Island for 1919, according to figures furnished by Fisheries Inspector Gallant was \$1,546,373, compared with \$1,209,073 for 1918. Following is a comparative detailed statement.

1919	
Alewives (cwt.)	120
Codfish (cwt.)	39,616
Clams and Quahangs (lbs.)	550
do., cases, (cans)	
Eels	(No report)
Fish Oil	(No report)
Haddock (cwt.)	2,196
Hake (cwt.)	20,473
Herring, Green, salted and smirked (cwt.)	30,310
Lobsters (cases)	32,460 $\frac{1}{4}$
Mackerel (cwt.)	11,788
Oysters (lbs.)	3,092
Salmon and Halibut	(No report)
Smelts (cwt.)	8,599
Tom Cod (cwt.)	176
Tongues and Sounds (cwt.)	
Trout (cwt.)	17

year by allowing thousands of cases of soft shelled lobster meat to be packed and shipped to all the markets of the world.

A fisherman for 35 years' experience writes as follows:—

\$	1918	\$
320	912	1,411
132,052	79,730	258,823
1,263	1,429	2,300
	1,310	10,160
		5,260
		16,990
5,927	1,861	15,022
54,595	15,593	106,865
69,255	22,733	60,367
1,081,794	26,881 $\frac{1}{2}$	562,752
87,492	11,188	89,358
41,547	3,005	26,209
		515
68,792	6,549	42,046
469	330	690
2,640		5,725
227	384	4,580
\$1,546,373		\$1,209,073

The smelt fishing closed on the 15th of February, and this will end the fishing until next spring when lobstering will start. The usual preparations are being made. There are agitations, however, in some quarters to change the season. For instance, there is a largely signed petition from packers and fishermen between North Cape and West Point to change the spring season to the autumn season from August 16th to October 15th, now in effect from Victoria to West Point. There is another petition to have the season from North Cape to Malpeque changed to the above dates, but the fishermen and packers are not unanimous on that point. A petition from residents of Wood Islands, Belle River, Flat River Pinette and Point Prim, has also been forwarded to the Department, asking to have the autumn season adopted in place of spring. There are quite a number in that locality who still favor the early season and the lack of unanimity will no doubt operate again a change being made. Letters pro and con have been appearing in the press. Those who favor the autumn season use the argument that owing to the ice and cold weather in the spring and to the fact that bait usually does not arrive from the Magdalen Islands until the 14th of May, that there is much time lost in the spring. On the other hand it is contended that the change would mean a disaster to the industry, that it would ruin the market in one

"I know that our spring season is the only practical season in which to catch and pack our lobsters. They are then at their best. We need a large quantity of herring for bait and the spring is the only time to procure them. In the spring season we use a large part of our bait fresh from the nets which saves us the trouble and expense of salting and re-salting them to keep them through the warm weather, which would cost the fisherman near two dollars a barrel. As the weather is cool in the spring the fishermen can keep the lobsters in their boats for eight or ten hours and they are in good lively condition when landed. Being hard shelled they are not so easily broken by being bitten by other lobsters. In the fall season, though they are soft shelled they are easily broken and die in a few hours in the warm weather. As to bait we will have to catch it in the spring and keep it until the fall.

I think that all of the packers and fishermen on the east side of the Island would object to a change in the season and I would advise the officials to go slowly in the matter before they make a change. Let them inspect the lobsters in the supposed fall season and they will find them just as I have stated; not fit for any market."

Another fisherman who had an experience of the late season writes that he did well the first few years.

There was big fishing but the fish were soon killed out. He also points out that the fall is harder on the gear as the worms destroy the wood at that time, that he has had to pay six dollars a barrel for bait, that much shifting of traps to new ground is necessary, that in the fall the days are shorter and as a rule colder and stormier, and so far as bait is concerned, all the fisherman has to do is to put in a few barrels in the fall so as to give him a start in the spring and by that time he will be able to get a supply of fresh herring.

At the annual meeting of the Charlottetown Board of Trade, the President, Mr. R. E. Mutch in dealing with fisheries advocated the establishing of a cod and hake co-operative curing station establishment under Government supervision, at every fishing point where the fisherman could deliver his catch and have it properly cured and marketed. The result would be a better quality for export trade. The Board had suggested that the Dominion Government provide trawlers fully officered and place them at the disposal of returned soldiers who had been fishermen. The profits would be returned to the Government until there was sufficient amount to pay for the boats and equipment and the latter could be handed over to the men. As these trawlers were not allowed to operate in inshore waters they therefore could not interfere with the inshore fishermen. There should be no objection to the suggestion but the Legislature at the last session saw

fit to vote against a resolution that trawlers could be employed. Some change must be made in the present system of our rich fisheries are to be further developed.

Mr. W. F. Tidmarsh, Manager of the Portland Packing Company, a well recognized authority on fishing says:—

"It is very doubtful if the ground fishery can be prosecuted successfully in small boats operating from the shore and returning to port every night. The expense of gasoline and the time occupied in moving between the shore and the fishing ground makes this method of fishing unprofitable. There are many days when the fish taken do not pay for the gasoline. To develop the ground fishery and make it profitable, it is suggested that it would be well to use crafts of from 20 to 25 tons with a crew of nine men and equipped with four dories. They should stay on the fishing-ground at least a week returning to port at or about the end of the week for the purpose of disposing of their catch and purchasing supplies for the ensuing trip. This method of fishing would admit of a larger concentration of the business at centres where shelter is available. Concentration would reduce the over-head and transportation charges and make it possible to ship fresh fish from these centres when the whole gauge of the Prince Edward Island Railway is standardized. There are great possibilities in the fisheries of Prince Edward Island but capital and energy are required for their development.



The Frameless Wooden Ship

By WALTER LAMBERT

Hon. Naval Architect to Canadian Fisheries Association



A novel and improved system of wooden ship construction has recently been evolved by an English naval architect and shipwright, the salient features of which are of considerable interest to fishing vessel builders and owners, if the inventor's claims are justified.

1. The omission of frame, and all crooked timber, and the elimination of the labour of sawing out, moulding, preparing and setting up of frame timbers. It is of course obvious that there is a dearth of crooked oak timber suitable for ship framing, while the large quantity of such timber required to build a single ship, and the waste entailed in converting and transporting such timber to shipyards forms a very considerable bar to the rapid and economical construction of such ships.

2. The elimination of salting. This commodity is also scarce, involves considerable transportation difficulty and expense, and is moreover a big and unproductive weight operating against the carrying capacity of the vessel.

3. A considerable gain in the cubic capacity of vessels of the omission of framing. This represents a valuable economic gain as the wooden vessel of ordinary construction has very considerable waste space occupied by framing interior ceiling etc.

4. No detriment to vessels' strength or seaworthiness. The fact that the system has received the ap-

proval of Lloyds will go a long way to satisfy the enquirer and substantiate this claim.

The structure comprises an inner layer of thick strakes of planking extending fore and aft of the vessel and an edge contact with each other, and secured to each other by edge bolting. The bolts are located in series, extending vertically from the keel to the gunwhale at equal distances apart, and each series comprises two lines of bolts, the bolts of one line of a series being inclined in opposite direction to the bolts of the other line of the same series, so that they form dovetail fastenings extending in lines in the direction in which the transverse frames would extend if the ship was of the ordinary construction. During the erection of the vessel, this fore and aft planking is temporarily supported by transverse moulds placed at suitable distances apart and which can afterwards be removed. On the outside of this thick planking is worked two thicknesses of thick planking laid diagonally from keel to gunwhale and crossing each other, and there the skin of the vessel is finished by a layer of outer fore and aft planking sufficiently thick to enable the edges to be caulked and the whole structure is fastened by clutch bolts which pass through the outer fore and aft planking, through the diagonal planking between and through the thick inner fore and aft planking.

The above are the salient features of the invention which is patented in England, the States, Canada and other Maritime Countries.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

MR. BALLANTYNE SAYS THE NEW REGULATIONS STAND

What would you have done? If, under the conditions, you were Minister of Marine and Fisheries and you had issued new regulations and then be asked by many to rescind them, and by others to keep them in force?

During the past month there have been many meetings held by the fishery and business organizations in Vancouver and Prince Rupert. At these meetings a great deal has been said, and many resolutions passed. Many of these resolutions have been sent to the Department of Marine and Fisheries at Ottawa. Without doubt those in authority at Ottawa have done some tall thinking. These resolutions were for and against the 1920 regulations as to throwing open the salmon fisheries of British Columbia. As a matter of fact all the Cannerymen do not agree on the subject, and they did not all sign the resolution that was sent to Ottawa by the Cannerymen Association. All the fishermen do not agree. There are different localities on the Coast where some of the Cannerymen would be harder hit than others, and these have been working hard to have the 1920 regulations held up. On the other hand Prince Rupert interests have been strong for the 1920 regulations.

Now that the Minister has stated that the 1920 regulations will stand there is a very good chance to have the embargo on the export of fresh salmon put into effect. This is one of the reasons why some of the cannerymen and fresh fish interests wish the 1920 regulations to stand. Every effort will be made to have the embargo put into effect now.

One good thing has been accomplished, important to the entire industry, and that is the bringing together in a harmonious gathering for the good of all, the Fishermen, and the Cannerymen in a conference regarding the different phases of the industry.

In analysing the reasons for the throwing open of the salmon fisheries of British Columbia, one must remember that the Department at Ottawa has been under pressure for many years to carry out this plan of throwing open the fisheries to British subjects. Some of the organizations who have taken part in sending recent resolutions were previously most strongly in favor of throwing them open. It may be said upon

fairly good authority that Mr. Ballantyne did not decide upon this step until the matter had been given every consideration, and it was at last decided to put the present regulations into effect. The whole coast has been divided into 21 areas as will be seen under another heading.

There is one thing quite apparent that no matter what regulations may be put into effect there will always be some that will not be satisfied, and under the conditions this is to be expected. It is practically impossible to frame regulations that will be satisfactory to all.

Ottawa being 3000 miles away, it would be preferable if the Department of Marine and Fisheries would appoint a fisheries Commission if nothing more than in an advisory capacity, to administer the British Columbia Fisheries. Such a commission was asked for by the Canadian Fisheries Association at the conference held in Ottawa in May 1919, and the matter was then taken under advisement by the Minister.

It is highly desirable that the Minister of Marine and Fisheries should visit British Columbia, and become personally acquainted with the conditions as they exist here. The industry awaits the visit and will be glad to hear when it is to be made. At the latest it is to be hoped Mr. Ballantyne will be at the coming Fisheries Association Convention in June.

The government should bear in mind that the salmon industry of British Columbia is one of the most heavily taxed industries if not the most heavily taxed industry in Canada. The industry as a whole feels that it is not receiving the close personal attention that it deserves. This attention cannot be given unless the Minister himself visits this part of the country at least once a year. Any man at the head of a large business makes a trip to the different branches of his business at least once a year. He should not depend upon his deputies for information all the time.

NEW ADDRESS FOR VANCOUVER BRANCH C. F. A.

The office of the Vancouver Branch of the Canadian Fisheries Association is now at 528 Winch building, 739 Hastings West, where Secretary F. E. Payson now has his headquarters.

THE EMBARGO ON EXPORT OF FRESH SALMON.

At a recent get together meeting of the British Columbia Fishermen and the Cannerymen, it was well shown that the fishermen had never been told just how the embargo would work out. Many, if not all of them, had never been told how the 15 per cent. import duty into the United States worked against the canneryman in marketing the finished product, and this same 15 per cent. was assessed on the finished product at market prices, which figures out about 40 per cent. to 50 per cent. on the raw product. This applies particularly to chums, as it is this variety that the fisherman seems most concerned with. When Mr. Hager explained that he did not believe that the cannery could take all the fish offered the first year, should an embargo be put into effect, but that after the first one or two years they could take all that were offered, and pay as high if not higher price, and it would prove to the best interest to the fishermen in the long run, the delegates of the fishermen's organizations could not quite see why they should give up to such conditions, but were quite willing to take the matter to their respective bodies for further consideration. Many suggestions were offered, among them a bounty on such fish should an embargo be placed and an export duty on all fresh salmon exported, if the export is still allowed. It was explained to the fishermen that the United States packer, who was able to secure very large catches of salmon in their Alaska traps, and pack a much smaller amount at a much less cost, could well afford to come to British Columbia and pay higher prices, as his average cost for production would still be less than the British Columbia packer could ever hope to put up the same number of cases as the United States cannery. Then again if he could pack at even as low a cost the import duty was against him. What ultimately would be the condition is that the United States packer, if he wanted the British Columbia salmon, would come to British Columbia and pack them.

As it stands today, a very few comparatively get the benefits of the sale of the fresh salmon, and many of them, if not the majority, that get this benefit, are Japanese and others who are not genuine British Subjects altho they may carry naturalization papers. They only hold naturalization papers so as to be able to secure certain privileges. The Japanese do not spend their money in Canada. They use Japanese nets and gear. All their boats are made by Japanese labor, and when they get their money the most of it goes back to Japan. If all these fish were canned in British Columbia, the money would stay here. The lumber mills that manufacture the boxes would be benefited, the can manufacturing plant, and every industry that sells supplies to the British Columbia cannery would receive the direct benefit that home industries always distribute when they are operating their plants. Under these conditions why hesitate about placing the embargo into effect? It is for the benefit of a greater majority than by allowing the export of this valuable natural product which benefits a few. Again these few would ultimately receive the greater benefit when the British Columbia packer would be able to go into the very markets that are now held by the United States packer and compete with him.

VANCOUVER BRANCH OF THE CANADIAN FISHERIES ASSOCIATION HOLDS IMPORTANT MEETING

On Wednesday night, February 18th the Vancouver Branch of the Canadian Fisheries Association held a meeting at which the officers for the year were elected and many matters of importance were thoroughly discussed. The National Secretary from Montreal was present and chairman Hager presided.

Before commencing business two moving picture films taken by Mr. F. W. Wallace which proved of great interest to the members present, were shown. These were pictures of up-to-date steam trawling in the Pacific off Prince Rupert and a contrasting film of deep sea fishing from a schooner and dories in the Atlantic.

Mr. Hager suggested that Mr. F. E. Burke was the proper man to succeed him and upon a unanimous vote executive officers as follows were elected. Chairman F. E. Burke, Vice-Chairman J. S. Eckman and Secretary Treasurer F. E. Payson, re-elected.

The matter of the Convention to be held in Vancouver on June 3, 4, and 5 was then taken up. About sixty American and Eastern delegates with their wives are expected to be in Vancouver for the occasion and both money and energy is needed to make the Convention a complete success. It may be necessary to get support from the Board of Trade and the Provincial Government. Mr. Wallace submitted an itinerary and the visitors will arrive on June 2 and the three days of the Convention were planned out to transact serious business and give the visitors a welcome they would remember.

At the Chairman's request, Mr. Wallace outlined a proposal for the establishment of a college of fisheries in British Columbia, and referred to the excellent results obtained by a similar institute in Seattle. A sum of \$10,000,000 had been voted by the Dominion Government for technical education, to be distributed over ten years to each Province on a population basis. British Columbia's share for the first year would be \$43,000. If the fisheries wish a share of this it will be necessary to act quickly as all the other industries will be after all they can get and the fund would be quickly absorbed. Mr. Hager stated that in a conference with Professor Gill it was suggested as a basis that British Columbia should build and equip a school from local funds. The Government would maintain the college the pay the staff of professors and lecturers.

A committee consisting of Messrs. Henry Doyle, A. J. Davis, F. E. Burke and Dr McLean Fraser was elected to deal with the matter.

The distillate situation was discussed and it was decided to ask the Board of Commerce to ascertain why the price had advanced so rapidly and why this product was to be taken off the market.

Mr. Hager said the distillate so essential to the industry had gone up to such fabulous prices that the situation was very grave. In a few months the price ex-bonds had gone up from 27½ to 37½ cents on Feb. 17. Stocks in bond were not procurable and the manufacture of distillate was to be stopped altogether. It was resolved to ask the Board of Commerce to ascertain why the price went up, and the reason for the cessation of manufacture.

The subject of an embargo on the export of fresh salmon caused a lively discussion. British Columbia has not yet reached the stage where she will be unable to supply the canneries with sufficient raw material but if the present conditions continue to exist she will soon be in the position of the American canners who have to import salmon from British Columbia. It was decided that the export of fresh salmon should be stopped. Views had been put before Ottawa by members who had not understood the situation, but now that they had more sympathetic representation there was a better chance of protective legislation.

Mr. Davis argued that the adverse exchange conditions rendered the present more opportune than at any previous time to urge the point. Captain Wallace offered to take any resolution passed personally to Ottawa and present the case with all the weight of the fisheries and allied associations behind him.

VANCOUVER IS GETTING READY FOR THE CONVENTION JUNE 3, 4, 5.

When Al. Hager was made Chairman of the Convention Committee at a recent meeting of the Vancouver Branch of the Canadian Fisheries Association, everyone felt we had a real live one in charge of affairs for this occasion.

Vancouver proposes to put over a convention that will be the best ever, and when those delegates from the East go back after "Seeing you in Vancouver" there will be just one remark and that will be "The best ever."

To all members outside of Vancouver the Vancouver Branch wishes to say "Watch your mail from now on. We are after you."

EXCHANGE EFFECTS FISHING INDUSTRY

Owing to the conditions in the exchange situation, there is no doubt but what much equipment which would have been purchased from the United States this year, is being omitted in the overhauling of the different plants. This is hard on some of the plants that would have liked to renew equipment or put in new machines, as Canada is not turning out every kind of cannery equipment. It also affects the gas engine business very largely on the Pacific Coast, as much of the equipment in this particular line is from the United States and it has been hard on those who have had to secure parts. New purchases have been few and far between.

VANCOUVER BRANCH INCREASES MEMBERSHIP

The Vancouver Branch of the C. F. A. is increasing its membership and when the convention dates arrive it is felt that the number will be large enough to show the visiting delegates that the slogan "SEE YOU IN VANCOUVER" is well said, and that the words "AND HAVE A WHALE OF A TIME" could well be added. Well, anyhow watch your mail.

CONSERVATION IS FIRST DUTY OF FISH DEPARTMENT STATES COL. CUNNINGHAM, DOMINION FISHERIES INSPECTOR FOR BRITISH COLUMBIA.

In the explanation of the decision of the Honorable C. C. Ballantyne Minister of Marine and Fisheries, to withdraw immediately the limitation on the number of salmon cannery and salmon fishery licenses that may be issued and at the same to refuse further licenses for salmon canneries or salmon seining or trap-net fishing to others than resident citizens of the white race or to joint companies consisting entirely of such persons, and also the Ministers decision that no further number of gill-net or trolling licenses,—the other methods of salmon fishing—will in future be granted to resident citizens of other than the white race or native Indians than were issued to them for the past season, Col. F. H. Cunningham has issued the following statement by way of comment.

"There has been a great deal of argument and criticism by the public in regard to the salmon fisheries of British Columbia for some years. The present Order would suggest that all limitations on the number of canneries operated, and the number of salmon gill-net licenses issued, have been removed. In the case of salmon gill-net licenses the licensee must personally conduct his own operation.

Insofar as the Japanese are concerned they remain in precisely the same position as at present; the limitations in the number of salmon gill-net licenses issued to them remaining the same. In the past no salmon purse-seine or drag-seine licenses have been issued to either Japanese or Indians and this condition will maintain.

It is probably that the Province will be divided into areas and any person may take out a license for any or all areas, but there will be no transferring licenses from one area to another. The department does not look with favor on salmon drag-seine licenses and in all places where a drageine can be replaced by a purse-seine it will be done. In any event no additional trap-net licenses will be issued for the season of 1920.

As conservation is the first duty of the Department it is to be expected that drastic regulations will be put in force to enable the parent fish to reach the spawning grounds and thus provide for a supply of salmon for future years.

A license may not be sold or bartered in any way by the original licensee.

The restricted policy adopted by the government for the past few years does not appear to have been perhaps in line with full public opinion, but the new regulations as at present understood give all white British subjects full opportunity to take a part in operating one of our greatest national assets. The department will naturally expect the assistance of each and every licensee in enforcing the regulations for conservation as the asset is a public one and the public should assist in conserving it."

NATURAL HISTORY.

They were looking at the kangaroo at the zoo when an Irishman said:

"Beg pardon, sor, phwat kind of a creature is that?"

"Oh," said the gentleman, "that is a native of Australia."

"Good hivins!" exclaimed Pat, "an' me sister married one o' thim."

BRITISH COLUMBIA MAKES A START ON COLLEGE OF FISHERIES.

When the Vancouver Branch of the Canadian Fisheries Association selected their committees to consider the prospects for a college of Fisheries, they were very fortunate in their choice.

Previously to the appointment of this committee the Vancouver Branch held a luncheon meeting with Prof. L. W. Gill, and Mr. Kyle as guests. At this meeting Prof. Gill addressed a very representative gathering of the fishing industry of British Columbia. He gave the entire details regarding the allotment of the \$10,000,000 grant which the Dominion Government had appropriated for technical schools. Prof. Gill also stated that he had visited Seattle, and inspected the College of Fisheries which is being operated in connection with the University of Washington, and reported that he is very much in favor of the establishing of such a college along similar lines in British Columbia, and hoped that the industry would do everything possible to support such a school.

These men are Mr. F. E. Burke, Manager Wallace Fisheries Ltd., Chairman of the Vancouver Branch for 1920, Mr. Henry Doyle, Vice-Pres. Northern British Columbia Fisheries Ltd., one of the best posted men on the salmon industry on the Pacific Coast, Mr. R. J. Davis, Supt. Canadian Fishing Co., Ltd., a man new to the fishing industry, but one who has made a study of technical schools, and Dr. C. McLean Fraser, Biologist for the Dominion Government in British Columbia, who has the establishment of such a college at heart.

This committee at their first meeting were assisted by having present with them Mr. John Kyle, who is in charge of the Technical School branch of the Department of Education of British Columbia, and under whom is placed the administering of the Dominion allotment for technical schools, and Mr. F. W. Wallace, the National Secretary of the Canadian Fisheries Association. The entire situation was gone over by the committee and Mr. Kyle explained just what the Government would do to assist, and Mr. Wallace told of the great interest the Fisheries was taking in having such a college started. Another meeting will be held shortly to map out such lines along which it will be considered best to make a beginning.

Secretary Wallace, during his short stay in British Columbia devoted a good part of his time to a study of the situation in regard to the establishing of the college, and is sure that the British Columbia fishing industry will take hold of this project, and be the first to inaugurate such a college in Canada.

From time to time the "Fisherman" will report progress that is being made and it is hoped that something definite will have been accomplished in regard to the proposed college by the time the Fisheries Convention meets in June.

WHAT ABOUT FOREIGN FISHERMEN UNDER THE 1920 REGULATIONS.

It is reported that many seine boat owners from the United States will lease their boats to holders of British Columbia licenses and then work the boats. The new Alaska Fisheries Bill prohibits anyone who is not already a United States citizen from engaging in fishing operations in any capacity whatever unless they have declared their intention of becoming a

United States citizen. Why not prohibit any one from engaging in Canadian fishing operations in any capacity whatever unless they have been residents in Canada for a certain period? In any event attach some form of prohibition that will not allow a great influx of foreign fishermen, mostly Austrians by birth, to fish under the 1920 regulations. If this was done then the returned soldier fisherman will not have any fear of being crowded out, and this is what they have been afraid of under the new regulations.

CO-OPERATION WILL BENEFIT THE SALMON INDUSTRY OF BRITISH COLUMBIA

The activities of the British Columbia Fishermen's Protective Association should result in much good accruing to the fishing industry of the Province.

It is not to be expected that the members of this organization should see eye to eye with the large operators at all times, but the true note of co-operation was struck when the general feeling which prevailed at a recent meeting showed that the aim of the organization was a spirit of co-operation with the officials of the Fisheries Department, the Japanese fishermen and the cannerymen.

This is a step in the right direction. With every indication of varied and far reaching changes taking place in the fishing industry of British Columbia, the greater is the need of co-operation between all those interested in the industry. The result will be that much good will be accomplished by such co-operation.

Just now when careful and serious consideration is being given to technical education, and the establishment of a school of Fisheries is being considered, it is to be hoped that every one engaged in the industry will take hold and help to see that such a school is established. It will mean a great deal to the industry and will be a valuable asset to the Province. Men trained in such a school will be valuable at times such as these, when the industry is in such need of men trained along the right lines. Those who are capable of planning for the future of the industry are sorely needed. Changes are being made that are bound to have far reaching results to the salmon industry of British Columbia and for the good of the industry every man engaged therein must do his best to assist by co-operating in every movement to better conditions.

FRED WALLACE TAKES FLYING VISIT TO VANCOUVER

When Frederick William Wallace National Secretary of the Canadian Fisheries Association and Editor of the Canadian Fisherman announced he proposed to make a three months trip to enjoy the mild winter climate of British Columbia the proposal met with general approval in the industry in British Columbia. After our genial Secretary arrived in Vancouver we found that his business arrangements were such that he could only spend about three weeks with us.

However, during that three weeks he has certainly covered some ground and learned much about intimate details of the industry especially the salmon canning branch which is bound to prove very valuable both to himself as Secretary of the National Association and also to the salmon canning interests. Mr. Wallace returns East with a fund of information which will prove invaluable to

the interests of those in British Columbia as there are many questions which come up at Ottawa on which he, as Secretary will be able to assist in presenting the view point of the Vancouver Branch. Many times matters might have been more quickly adjusted if there had been some one at Ottawa in the past who could have presented the view point of the British Columbia interests when important questions were to be decided and those engaged in the industry could not be present. As it stands now the National Secretary is in the best possible position to assist in adjusting matters when they are brought up with the Department at Ottawa.

Another point to be remembered is that a visit of the National Secretary to the different branches means that he meets on home ground those who are interested in the industry and for whose interests the Association is working at all times.

Fred has made many new friends on this latest visit who, although they knew of him as being actively engaged in the interests of the industry at the same time had had the pleasure of meeting him personally. It goes without saying that the Canadian Fisheries Association has been much strengthened by the National Secretary's visit in Vancouver.

An important matter that Mr. Wallace took up while in Vancouver was the preliminary arrangements for the holding of the National Convention which will take place in Vancouver on June 3, 4, 5 of this year. The Vancouver members are surely going to show those from the East a royal good time and one which will be long remembered by the visiting delegates.

Vancouver was glad to see Secretary Wallace and regrets that he could not have arranged to spend at least two months at the Pacific Coast.

COMPTROLLER NICHOLLS OF THE CANADIAN FISH AND COLD STORAGE COMPANY BECOMES A BENEDICT.

On Monday February 16th, Mr. John Wm. Nicholls, Comptroller of the Canadian Fish and Cold Storage Company of Prince Rupert, son of the late Mr. and Mrs. John Nicholls, London, England, was united in marriage to Miss Vena Phelan, daughter of Mr. and Mrs. J. T. Phelan.

Mr. Nicholls was a former officer in the 62nd Battalion. The ceremony which was very pretily arranged, took place at St. Pauls church at 8.30 p.m., the Right Rev. Bishop DePencier, former chaplain of the bridegroom's battalion, officiating.

Mr. and Mrs. Nicholls left on the same evening for Del Monte, California where the honeymoon will be spent. They will reside in Prince Rupert upon their return.

With the Canadian Fisheries Association holding its convention on June 3, 4 and 5th, Vancouver will have close to 4000 outside visitors, who will be attending conventions during the six days beginning with the 3rd. Right after the Fisheries Association convention there will be the Canadian Manufacturers Association and the Alberta-British Columbia Industrial congress. This means that Vancouver will be a REAL LIVE TOWN during those six days. It is fast getting the name of the CONVENTION CITY of the Northwest.

DEEP SEA FISHERMENS' UNION DECIDEDLY NOT O. B. U.

The following letter from the agent of the Prince Rupert Branch of the Deep Sea Fishermen's Union of the Pacific shows where the Deep Sea Fishermen's Union stands as regards the O. B. U.

To the Editor of the World:

Sir:—In the B. C. Federationist of December 19, President Welsh of the International Trades and Labor Council of that city was criticized very severely in his recent report of the Deep Sea Fishermen's Union of Prince Rupert, B. C. I wish to verify his report in the daily press of December 5, as I, with three delegates of our union gave him the report he published. As stated by him there has been but one book given in to me by a salmon fisherman who had gone over to the O. B. U. There has been none of the halibut or beamtrawl fishermen given in their books. They must surely know when they join the O. B. U. they are not considered members of the Deep Sea Fishermen's Union, as a member of any dual organization cannot belong to our union. There may be some of our members other than salmon trawlers in the O. B. U. but they have not admitted it to the agent here. The men have a perfect right to please themselves, but they must surely know as before stated, they cannot uphold the two.

Yours, etc.,

(Signed) J. H. Meagher.

Agent of the Prince Rupert Branch of the Deep Sea Fishermen's Union of the Pacific. Prince Rupert, Dec. 30., 1919.

ENGLISH FIRMS LOOKING TOWARD BRITISH COLUMBIA.

Recently several large British Firms of canned goods brokers have been looking toward Vancouver with the idea of opening up branches here. Great Britain is without doubt one of the greatest exporting countries in the world when it comes to getting after the world trade. Just as soon as the British firms found out that much of the canned salmon was being sold direct to markets which had formerly been sold through British houses, they began to take notice, and as a result they are now planning to open up in Vancouver, and ship direct from here instead of doing as they have done previously, that is, ship to England, and then tranship to the world markets. Vancouver is fast getting the shipping facilities by which shipments may be made to any part of the world, and this means that local houses are now able to sell the markets that were formerly sold through British houses. It is safe to say that during the coming year, a greater amount of the 1920 pack of canned salmon will be shipped by water than will be shipped by rail, and these shipments will be to all parts of the world.

PREPARING FOR THE SPRING SALMON TROLLING SEASON.

Preparations are being made by the troll fishermen for the spring Salmon catch. It is estimated that there will be at least 2000 boats fishing this season in British Columbia waters for Springs. This is a considerable increase over previous years although 1919 saw a large increase in troll fishing. If expected results should obtain there will surely be a large catch among the troll fishermen.

DOMINION FISHERIES DEPARTMENT PATROL FLOTILLA IN BRITISH COLUMBIA.

Last year the Dominion Fisheries Department had a fleet of forty-five vessels on patrol. It is believed by the department that the new policy which has raised all restrictions on the issuing of licenses to white British subjects will be the cause of greatly increasing the number of fishermen this coming season. This will necessitate doubling or possibly trebling the number of fish patrol boats.

Last year the Department chartered twenty-five craft of various sizes to augment their fleet. These were between 30 and 60 feet in length and were manned by crews of two or three. They were all good sea boats and rendered valuable service. Many more boats will have to be chartered this season as the work of patrolling the coast line will be more difficult on account of the increased number of fishermen.

Many of these vessels will commence work in April; the rest following them in June.

WITHDRAWAL OF DISTILLATE AS ENGINE FUEL MEANS MUCH TO INDUSTRY ON PACIFIC COAST.

The Oil companies on the Pacific Coast in the United States have withdrawn distillate from the market which means that marine engines burning fuel oils will have to depend on other varieties of petroleum products for their fuel. In British Columbia there are about 20,000 barrels on hand in Vancouver which will keep the boats going for three months at least.

The British Columbia consumption is about 75,000 barrels a year. Mr. C. N. Rolston, manager for the Imperial Oil Company of Vancouver has recently come out with the statement that they will have sufficient supplies of distillate in Vancouver for all of those customers who have been buying from them regularly but that there will not be sufficient to supply other than those customers. This is accounted for by the fact that they can make a run on Peruvian crude oil at the Ioco refinery for an article which will take the place of distillate so far as the use is concerned in engines. This has been done from time to time in the past but the supply will not be sufficient to meet the demand on account of the companies to the South having discontinued making distillate. The Company cannot, therefore, accept new business as they will not be able to supply more than their regular customers and even this will mean cutting down the supply of gasoline.

"SEE YOU IN VANCOUVER"

June 3, 4 and 5 are the dates! The Eastern members will not be able to forget these dates, and that the next convention is to be held in Vancouver. They will be bombarded with all kinds of information about Vancouver and British Columbia. Vancouver is certainly becoming a great convention city. The Fisheries convention this year will sure be one humdinger, so get your reservations booked way ahead and bring all the family, because Vancouver is looking for you. Chairman Hager of the Convention committee is not overlooking any white chips. Any one that knows Al. knows what that means.

VANCOUVER WHOLESALE FISH MARKET

Fresh local caught cod have been arriving in fairly good quantities and the price has been ranging from 10 to 12 cents with a good demand. The cod are in much better shape than for some time past as they are now past the spawning period and the flesh is much firmer.

Fresh silver smelt are in fair supply, the price ranging from 10 to 12 cents.

Fresh local caught soles are being landed in fair quantities the price ranging from 7 to 8 cents.

Fresh sable fish are on the market at 10 cents per pound. The most of this last variety is arriving from Prince Rupert.

Carp. This variety of fish is not handled extensively as they have to be brought in from the Columbia River. The London Fish Company are handling quite a few hundred pounds each week and the price ranges from 10 to 12 cents. The fish are caught and shipped the same day and in many cases arrive in Vancouver alive so that the stock is in fine shape for shipping.

	cents per lb.
Halibut chicken	13
Red Springs (heads off)	18
White Springs (heads off)	10
Cohoos	16
Ling Cod (plentiful)	8
Grey Cod (scarce)	5
Red Cod (round)	5 to 6
Smelt (scarce)	10 to 12
Soles and Brills	6 to 7
Herring	3 to 5
Skate	4
Perch	6

Shell Fish

Crabs (scarce) (per doz.)	\$1.00 to \$1.50
Shrimps	22c to 25c.
Clams	2½c. to 3½c.

Vancouver Prices Smoked and Salt Fish

Smoked Sable Fish (black cod, whole)	14
Kippered Sable Fish	20
Fillet, Sable Fish	17
Smoked Pink Salmon (whole)	20
Kippered Salmon	18 to 20
Bloaters	7½
Kippered Herring	9
Eastern Haddie	14
Western Haddie	10
Herring Chicks in bundles of 5 boxes (per box)	18

Salt Herring:

Medium, 900 to 1000 count, 250 lbs. net.	\$ 8.50
Medium, 1400 to 1500 count, 250 lbs. net.	7.50
Large 200 lb.	8.50
Large 100 lb.	5.25
Large 50 lb.	3.25

Salt Sable Fish (Black Cod):

200 lbs.	22.00
100 lbs	12.00
50 lb. (Kit.)	6.25

Salt Pink Salmon:

200 lbs.	15.50
100 lbs.	8.50
50 lbs.	4.75

Salt Grey Cod:

50 to 200 lb. per lb.	10c.
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CANNED SALMON MARKET.

At this time of the year it is impossible to say much regarding the canned salmon market. It it were not for the chum pack there would not be much of interest to say. All grades have been cleared up, and it may be safely stated that a good amount of the chum pack is being disposed of. As to prices—they vary, and perhaps it is just as well not to name any for this very reason. One thing is certain if anywhere near a fair price is received it will be much better to move all the stock possible rather than to carry it over another year. There is no doubt that with the 1920 regulations in force there will be a larger catch of salmon this year than for some years, that is, if the salmon are running in the quantities that allow for this. Although there is a scarcity of gear, this may be overcome to some extent. No doubt there will be an advance in the 1920 prices and this will be warranted, as the cost of all material is high, and the salmon canning industry is very heavily taxed, probably more so than any other industry, in proportion, in Canada. It is a question as the number of chums that will be packed. No two canners agree as to what is best in this respect and this will be gauged by the amount of the old pack that is left if there should be any.

FISH OIL AND FERTILIZER MARKET

The demand for fish oils is becoming more marked. Some of the large buyers are making strong efforts to increase the supply of fish oils, and are getting in touch with every one who can possibly produce this by product. Fertilizer is always in great demand, but in most cases the meal is used for stock feed, as the prices are better, and the demand is just as great. This year bids fair to be the greatest year in the by products industry in British Columbia.

B. C. PACKERS ASSOCIATION HAVE GOOD YEAR.

According to the annual report of the British Columbia Fishing and Packing Company, the operating company, the British Columbia Packers' Association, has paid to the shareholders in dividends during the year the sum of \$234,881. On August 21, the dividend rate of the company was raised from 5 per cent to 6 per cent.

The report says that demand for higher grade salmon greatly exceeds the supply, but the lower grades are hard to sell and the association has a considerable quantity unsold on hand. "But," it proceeds to say, "as the cost of packing will be considerably higher the coming season, we feel satisfied that the stocks held will be sold at inventory prices or better."

Among the total assets are included real estate buildings, canneries, etc., less depreciation to the value of \$2,462,648, as against \$2,610,539 last year. Insurance fund and other investments are given as \$265,400. Shares in and advances to other companies are \$369,172.

These two items compare with a total of investments in last year's report of \$580,251, which shows an increase of \$54,320. Inventories of stores, nets and supplies total \$628,330, and fish canned and in cold storage are valued at \$386,050, which makes a total under this head of \$1,014,381, which is slightly under the total for the same time last year, which totalled \$1,035,553.

Cash on hand and in bank this year was \$223,962, which is somewhat of an increase over the same last year, which amounted to \$6,116.

In the total liabilities, accounts payable and accrued taxes are shown at \$184,708, which is a considerable reduction from the same item a year ago, which amounted to \$347,207. Reserves have increased from \$726,257 last year, to \$751,614, while surplus this year is \$1,465,802 against \$1,439,694 last year.

New Whaling Company.

Industry to be Conducted on British Columbia Coast.

Victoria, March 8.—With a capital of \$500,000 the Vancouver Island Whaling Company has been formed to carry on whaling on the British Columbia coast and to manufacture fertilizer from fish offal. Returned soldiers will be employed wherever possible. Headquarters will be in this city and a plant established on Barkley sound. Options have been secured on steel vessels, and whaling will start this summer.

The Consolidated Whaling Company, formerly the Victoria Whaling Company, has a new staff comprised as follows: Geo. LeMarquand, formerly manager of the Company's plant at Bay City, Wash., has been appointed manager, succeeding Sydney C. Ruck. The position of Superintendent engineer, which was filled by Wm. N. Kelly is still vacant. It is understood that Edward Sealpen, for many years chief mechanic at the C. P. R. machine shops in Victoria, will become one of the managers of the accompanying whaling stations.

T. McAVITY & SONS, LTD., MARINE ENGINE ACCESSORIES DEPARTMENT.

The eighty-six year old firm of T. McAvity and Sons, Ltd., St. John, N. B., has been supplying the fishermen of the New Brunswick, Nova Scotia, Prince Edward Island, and the Gaspé Coast with reliable Engines and the different parts and accessories that go to make these Engines perform more efficiently, for the past fifteen years. Agents of the "Mianus" Heavy Duty Gasoline Marine Engine, they have placed many of these in fishing craft of all description, and that this Engine is suited to this work, is proven by the fact that some of them, installed twenty years ago, are still in good condition and "going strong". Messrs. McAvity are contemplating manufacturing an Engine of their own in the near future, and then will be able to offer an article suited for heavy duty, such as is met with by fishermen, and entirely reliable, along the same lines as "Mianus".

All buyers have found it advantageous to purchase their requirements in the accessory line, such as, Propellers, Stuffing Boxes, and Stern Bearings, Spark Coils, Plugs, Priming Cups, etc., "at McAvity's" as they being the manufacturers of these, are able to get below the prices of American manufacturers on account, of course, of the existing tariff coupled with the high exchange rate.

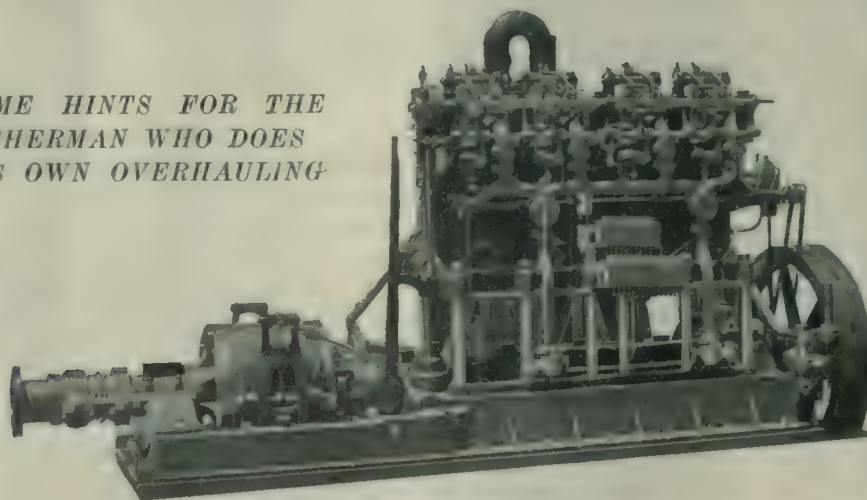
The Messrs. McAvity as well as manufacturing articles of interest to Boat and Engine owners have several large plants devoted to the manufacture of all classes of Iron, Brass and Steel goods, Engineers and Plumbers supplies and kindred lines. They have just completed the edition of a twelve hundred page catalogue "No. 40", which will be mailed to any interested firm or party upon receipt of request and address.



OVERHAULING THE MOTOR



*SOME HINTS FOR THE
FISHERMAN WHO DOES
HIS OWN OVERHAULING*



The fisherman who overhauls and cares for his own boat is the man who especially appreciates having his power plant operate with perfect reliability and efficiency. He needs to know that every part will do its work unfailingly regardless of wind or weather.

To do this, the engine must be thoroughly inspected and every item about its construction put into the best possible condition. The inspection cannot be made except by practically taking the entire mechanism down and going over it piece by piece.

It is assumed that the owner who does his own fitting-out knows the proper use of a screw driver and monkey wrench and that he also knows enough to use an "open end" wrench whenever and wherever he can in preference to a monkey wrench. It is assumed, also, that he be able to recognize when his engine is really working well. It must also be assumed that the machine has been properly put away for the winter, so that no water can have frozen into the cylinder jackets or any other part, and all bright parts have been protected against rust.

Let us consider first the machine which has been run two or three seasons and needs a complete and thorough overhauling. In commencing this job, supply yourself with tools enough to do this work without having to use a cold-chisel, pipe wrench or pliers to loosen some rust, for instance. Never use pliers or pipe tools when an open end, socket, or monkey wrench will grip the piece to be loosened. Have plenty of clean cloths, not waste, for cleaning the parts. Also have a couple of brushes for scrubbing the parts when necessary. You will need several small receptacles at hand into which can be put all small parts which might otherwise become lost. Have handy a dish pan, or something of that nature, in which to wash the parts as they are taken down. Gasoline, naphtha, or kerosene may be used for washing.

Be methodical and systematic in all the work. Don't remove nuts and parts and throw them wherever there may be room, but before you let go of the piece at all, rinse it off and place in the box which is ready to receive it.

Mark Each Part As It Is Taken Off.

It is a good practice to mark each part as it is taken off, so that it may be replaced in exactly the same position. A scratch partly on the piece and partly on the engine will accomplish this result. If the engine is of the four-stroke type, great care must be exercised to mark the gears, so that they may be replaced with the same teeth in mesh. This is important, as this setting governs the timing of the valves and, therefore, the operations of the engine.

After taking down, the next step is to thoroughly wash and wipe dry every part and clean up any mess there may be. Now take the cylinders and pistons out of the boat, if possible, and remove all deposits of carbon which may have collected in the combustion chamber and in the piston head. This requires some labor and can be accomplished by means of scrapers or may be burnt out with an oxygen torch. The oxygen process is preferable when it can be obtained. Nearly any well-equipped repair shop can do this work for you, and many of them are equipped with portable outfits which can be brought to the boat. The cost will not exceed \$1 per cylinder.

Now carefully remove the piston rings and be sure that the ring grooves are entirely free of carbon. Again, clean piston, cylinders, rings, etc. At this point it is well to place your order for new piston rings, if needed, and they are usually needed after three seasons' use. The use of a gas-tight ring of some kind is good practice, as it will save you oil, gasoline and trouble from carbon.

Refitting and Connecting Rod Gearings.

Connecting rod bearing should be refitted and so adjusted that when the bolts are drawn up tight the weight of the rod will cause it to slowly rotate when released from nearly an upright position. Don't set them up too tight. Main bearings should be taken up in the same manner and adjusted so that when every bearing is drawn up tight the crank shaft can be turned by hand. See that the bushing in the piston end of the connecting rod fits the piston pin without "shake" and is still free enough to allow the pin to be turned by hand.

The bearings of the cam shafts may need renewing, so that they will not shake and knock. The push rods for the valves should not be too loose. Valve stems should fit freely, but not shake. This is especially true of the intakes, because if too loose, they will allow the engine to draw in air and thereby effect the mixture.

Valves Will Need Re-grinding.

Look over the valves. These will need regrinding. A word of caution here may be useful. Do not try to grind too fast. Don't bear down on the valve. The weight of the hand and forearm is plenty of pressure. Don't use a bit brace and turn it round and round, as so many do, but better use a screw driver and work the valves back and forth in one position and then another. Finally, by inspection, it will be found that both the face of the valve and its seat show up bright all the way round. Then, and not until then, is the grinding finished.

The plunger pumps will very likely need to have their valves reground also. The water pipes and connection should be washed out, as also the cylinder water jackets and all other passages which there may be.

Look over the bearings of the reverse gear and renew those which have been worn. The brake band may need renewing or perhaps some of the clutch parts. When putting it back together, be sure that it contains its proper lubricant in sufficient quantity.

In assembling the engine, be sure that all parts are entirely free from dirt of any description and that all moving parts are thoroughly lubricated. Too much oil is better than not enough.

A Word on Gaskets.

A word on gaskets at this point might not be amiss. For 4-cycle crank cases, gear cases, etc., heavy manilla connections which are flanged, blotting paper shel-laced on one side and oiled on the other. For intake manifold and carburetor gaskets, blotting paper shel-laced on one side is very satisfactory. For water connections which are flanged, blotting paper shel-laced on both sides is good. If not subjected to high temperatures, flat prepared rubber packing is good on water lines. Exhaust manifolds and connections must have asbestos for packing. Use that kind which has woven into it a wire gauze. This material is also best for cylinder heads unless copper asbestos-formed gaskets can be procured from the engine builders.

If the flywheel has been removed, look out for it when you put it back. Try to see if it is right.

Most of what has been said applies also to 2-cycle engines. There are, however, two or three points to consider which are peculiar to this type of machine.

One of the greatest causes for annoyance with a 2-cycle engine consists of small air leaks into the crank case. Watch this carefully. See that all main bearings fit closely, but not so as to bind. Have them fit the crank shaft all the way round. See that every gasket or piece of packing round the crank case is whole and not torn or patched. A coat of shellac on both sides of the gasket will assist in getting an air-tight job. These precautions are especially true of engines with more than one cylinder, which take their mixture from one carburetor. Remember that this type of engine is more sensitive to changes of

mixture than a 4-cycle type and that to be uniform in all cylinders there must be no chance for the engine to draw air into the crank case and thus dilute the mixture in that cylinder.

Overhauling the Ignition System.

After assembling the engine, give your attention to the ignition system. Read your directions for its care and see that its condition is as described. Be sure that spark plugs are clean and not broken or cracked and that the spark gap is the proper length. Have all connections bright and clean and all contact points smooth and free from pits. Be sure no wires are broken or soaked with water or oil. Start out with a good battery, if you use one. Don't allow yourself to be "sloppy" about your electric equipment. The wires should all be fastened in place and in such a manner as to protect them as much as possible from oil, water and dirt, but have them accessible.

Look over your oiling system and thoroughly clean all pipes, valves, reservoirs, gages, etc. Start out with new, clean oil of a good grade and be sure it is gas engine oil and not just oil.

Your gasoline tank should be completely drained and cleaned as much as possible. Gas pipes and fittings drained and completely freed of any possible dirt. Use a good gasoline strainer and settling cup in the feed line. When you fill your tank, strain the fuel through chamois skin. This precaution may save a serious stoppage of the engine when most needed.

When you first start out in the spring, watch your machine carefully. If trouble of the slightest kind develops, fix it then and there. The secret of successful and satisfactory engine service lies in caring for the little things which go wrong right then. Don't delay in making necessary repairs or adjustments.

GASOLENE BOATS IN THE GASPE FISHERIES.

Says Hon. Frank Caryl in his book "Along the Gaspe Coast":—"In the town of New Carlisle... the garage and modern gasoline filling hydrants pumps are as common a sight on the roads as in any part of Western Canada. But this is not extraordinary for the fishermen are all now using gasoline engines in their fishing smacks and they are as apt mechanics in this direction as they are adepts in handling the line and hook."

SELF-TITLED.

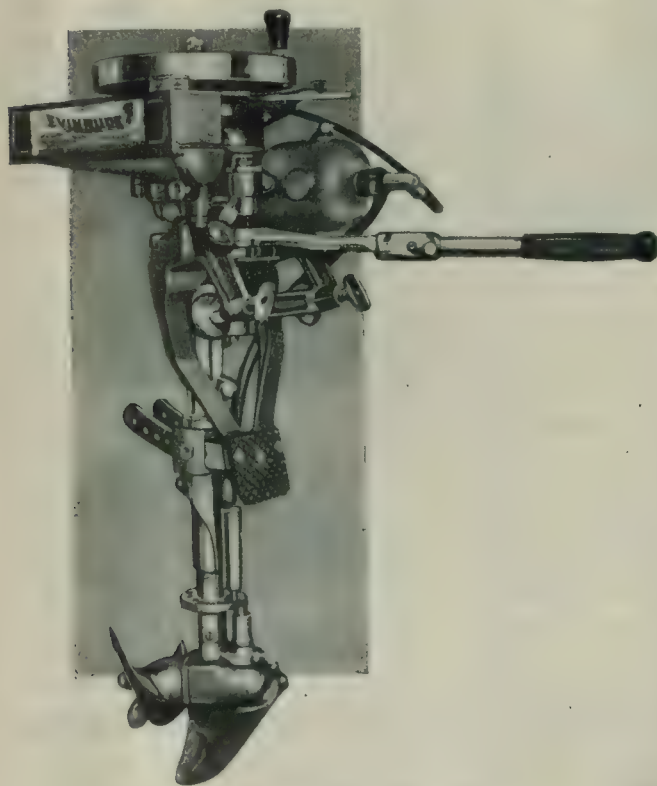
A GUY once got into a smoking car in Ontario, chummed up with the man next to him, handed him a cigar, and said "Say, you're not supposed to do any fishing up here this month, but I don't mind telling you I've got 100 lbs. of the finest bass out in the baggage car that you ever laid eyes on." The newly made acquaintance puffed away at his cigar for a minute or two, and then said, "Say, d'ye know who I am?" "No, who are you?" asked the fisherman. "I'm the Provincial Game Warden of Ontario," he replied. "The devil you are!" ejaculated Izaak Walton's disciple. "Do you know who I am?" "No! Who are you?" "Well, I'm the biggest liar in North America."

OVER 100,000 EVINRUDES SOLD

The 3½ H.P. Evinrude Detachable Rowboat Motor is being used by over 6,000 Canadian, Scandinavian and Alaskan fishermen as power for their fishing boats.

The 3½ H.P. Evinrude is their choice as there is plenty of power to handle heavy loads. There is also plenty of power to buck the tide when she's running strong.

The 2 H.P. Evinrude is used on smaller boats or dories up to 18 ft.



The Magneto—Built-in Flywheel Type, gives a good hot spark. Easy starting of the Evinrude is one of the big features. The entire magneto is enclosed which prevents water or spray from causing ignition trouble.



With the Automatic Reverse the direction of the boat can be changed from forward to reverse, or vice-versa by simply giving the steering handle a quarter turn or twist.

The process of balancing the flywheel does away with the vibration; the Evinrude plugs along using all its power to propell the boat.

Tiltup attachments and easy starters can be had for the 2 H.P. model.

The tiltup attachment permits the motor to be tilted inboard when going over shallow places or when beaching the boat.

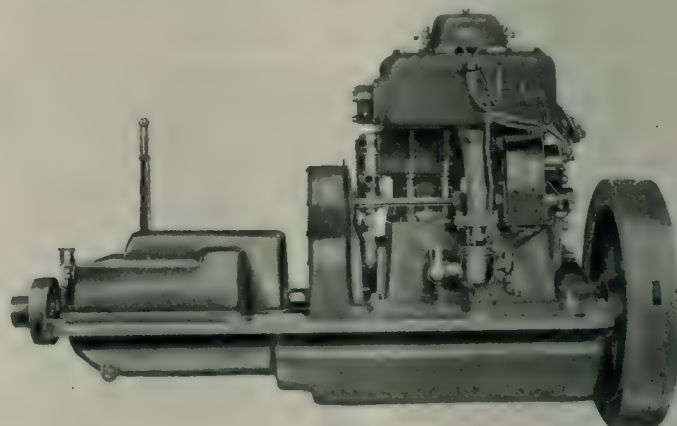
The Easy Starter does away with the ordinary starting crank. It is a round aluminum disc which is fastened to the flywheel hub. A rope is wound around the disc, and with a steady pull the motor can be started easily.

Evinrude dealers can be found in all large sea-side cities.

E. Drolet, at Montreal, Quebec, George Horrocks, at Victoria, B.C., The A. R. Williams Machinery Co., Ltd., at Toronto, Ont., & St. John, N.B., & The Saskatchewan Motor Co., at Regina, Sask., have motors in stock for prompt deliveries

A "STERLING WORKER.

The engine illustrated herewith is the Model D, 12-15 H.P. Sterling and is primarily an engine for the work boat. The capacity of this engine for hard labor is enormous. It has powered fishing boats and auxiliaries of from 30 to 68 feet in length at speeds raging from eleven to five miles per hour respectively. In the majority of boats it turns a 24 in. diameter by 24 in. pitch three blade propeller approximately 500 R.P.M.



It is unexcelled for salmon trolling as it may be throttled to low speed and will run steadily without over-oiling or over heating. From a trolling speed of 100 R.P.M. it will drive the average fishing boats 9 miles per hour at 500 R.P.M. The fuel consumpt is low as it burns fuel only in direct proportion to the power developed—one-eighth to one-ninth of a gallon per H.P. per hour up to 15 H.P. The motor runs equally well on gasolene or distillate.

Attention is invited to a few of the conveniences on this engine. The waterproof magneto is located high on the engine, away from water and dirt. There is room between the reverse gear and upper base for the attachment of any special gearing such as required for hoisting purposes. The water pump can be tapped to permit an attachment for pumping water to tanks, as live fish, or a bait barrel.

Sterling qualities of materials and high grade workmanship are embodied in this engine and as far as price is concerned there is less margin of profit in this engine than any other the Sterling Company manufacture. Full particulars of the Model D "worker" will be sent upon request to the Sterling Company, Buffalo, N.Y.

ACADIA STILL PROGRESSING

The Acadia Gas Engine Company of Bridgewater, N. S., have just completed a large new building for the manufacture of stationary engines. The building is of brick and is 132 feet in length by fifty feet wide.

The stationary engines at present manufactured are



6 H.P. engines which are used with vessels heaving and hoisting outfits. These are manufactured by the Acadia Stationary Engines, Ltd., and completed by the Acadia Gas Engine Company. From a modest beginning the Acadia Company have developed into one of the best known and most progressive gas engine manufacturers on the continent.

THE J. V. B.—A NEW MARINE ENGINE

Joseph Van Blerek has produced a solid, powerful engine which he characterizes as "the best motor I know how to build regardless of price." The new engine is built only in two speed ranges—one a high speed engine of 45-60 H.P. and the other a medium duty motor of 28-38 H.P. The "J.B.V." is a sturdy piece of mechanism well adapted for use in fishing craft and designed to use gasolene, distillate, kerosene, petrol or paraffine.

All parts are built of the finest materials obtainable and all of VanBlerek's knowledge and skill in engine design and construction has been embodied in the new motor. The price has been kept extremely low through quantity production and the employment of equipment on a new design engine. A post card to the J.V.B. Engine Company, Akron, Ohio, will bring an illustrated folder giving fullest particulars.

"I thought you loved a blonde last year?"

"I did, but she dyed."

It beats all what an important part of the house the cellar has suddenly become.

To quarrel with the cook is foolish; to do so before you dine 's damn foolish.

A DIRECTORY OF RELIABLE ENGINE MANUFACTURERS WHO SPECIALIZE IN MOTORS FOR FISHING CRAFT.

(READ THEIR ADVERTISEMENTS IN THIS ISSUE).

Acadia Gas Engine.

Sold by Acadia Gas Engines Ltd., Bridgewater, Nova Scotia.

Bolinder Crude Oil Engines.

Sold by Swedish Steel and Importing Co. Ltd., Shaughnessy Building, Montreal.

Burnoil Engines.

Sold by Burnoil Engine Co., 1103 High Street, South Bend, Ind., U. S. A.

Clift Trolling Engines.

Sold by Clift Motor Co., Bellingham, Wash.

Fairbanks Morse Crude Oil and Gasoline Engines.

Sold by The Canadian Fairbanks Morse Co., Ltd., Montreal, P. Q.

Gulowsen Grei Heavy Oil Engines.

Sold by Gulowsen Sales Corp., Seattle, U. S. A.

Gray-Prior Gasoline and Kerosene.

Sold by The Gray and Prior Machine Co., 58 Suffield St., Hartford, Conn.

Imperial Motors.

Sold by Bruce Stewart and Co., Ltd., Drawer 370, Charlottetown, P. E. I.

J. V. B. Engines.

Sold by The J. B. V. Engine Co., Box C, 911 South High Street, Akron, Ohio.

Evinrude Detachable Motors.

Sold by various agents in Canada.

Kermath Engines.

Sold by Kermath Mfg. Co., Detroit, Mich.

A REAL LIVE TOWN.

(With Apologies to the Vancouver Rotary Club).

If you want to see a real live fishery bunch,
Where there's always something to do at a fishery lunch;

Now don't get nervous for you'll find real service
It a town of renown, where fishes are found,
Just by your ticket for the Choo Choo train,
Ask Wallace at Montreal and he will explain
That you're a lucky mover
If your going to Vangouver,
For it is a real live town.

"MY FATHER'S a great man. The King touched him on the hand with a sword and made him a knight."

"Pooh! Someone touched my father on the head with a poker and made him an angel!"

FOR SALE.

50 H. P. 4 cylinder heavy duty Marine Motors. Complete with fitting. Snap for quick sale. Apply D. M. Reid, 425 St. Catherine St., Hamilton, Ont.



ATLANTIC AND PACIFIC MOTOR CRAFT



*A CLIPPER ATLANTIC FISHING BOAT USED
BY LOBSTERING AND LINE FISHERMEN.*



*A FLEET OF PACIFIC SALMON
BOATS ON THE FRASER RIVER.*



BOLINDERS IN THE BRITISH NAVY

Reference has been made in the press to the large number of Bolinder Oil Engines purchased by the British Admiralty during the war. We are now in a position to state that not less than 142 vessels were thus powered, the total number of Engines being 267.

Most of the Motorships in which these engines were installed can be segregated as follows:

No. of Craft	Class of Ship	Total B.H.P.
8	Monitors	4880 B.H.P.
4	Oil tankers	2660 "
109	Admiralty lighters	7660 "
17	Launches	380 "
4	Other types including engines for various purposes.	4385 "
52	Motor Winches	347 "

The eight Monitors were exceptionally successful in service in the Dardanelles and off the coast of Belgium. They were duplicate ships in practically every detail—170 ft. long, 31 ft. beam, 6 ft. draft, 700—800 tons gross, 640 B.H.P., speed 12 knots.

The Oil tankers were also in strenuous service and the reliability of their power plant was a prime requisite. These are the:

Name of Ship	Horse Power	Length	Breadth	Draft
"Oakol"	640	220'	34'7½"	16'6"
"Sprucol"	640	220'	34'7½"	16'6"
"Palmol"	640	220'	34'7½"	16'6"
"Teakol"	640	220'	34'7½"	16'6"

Nine of the motor lighters were of 160 B.H.P. and were 88 ft. long by 20 ft. breadth and of 8 ft. draft. Thirty-two lighters were of 80 B.H.P. and were 105



British Monitor Powered With Bolinder Engines.

ft. long by 21 ft. breadth and 7 ft 6 in. draft. Six more lighters were of the same dimensions but of 65 B.H.P. and 15 more were of 60 B.H.P. while twenty-four lighters were of 50 B.H.P. and 22 were of 40 B.H.P.

What Lord Fisher says about Motorships

Lord Fisher, the Admiral of the Fleet of the British Navy, has been contributing a series of very interesting articles to the London "Times" and here are some of his remarks regarding the Oil Engine and its uses:

"I have beliefs—some beliefs have to be like Resurrection, they require Faith—stupid people do not believe in the internal combustion engine, or in oil.

I have faith in both. Those two are not only going to revolutionize sea war, they are going to revolutionize sea commerce, for ample and convincing reason which I shall set forth in my book. I should at first build not necessarily fighting vessels, I should build tramps to carry oil, with ever improving internal-combustion engines fitted in them."

"The future of sea war and the future of sea commerce absolutely rest on the internal-combustion engine, and the internal-combustion engine cannot exist without oil."

"Every nation except ourselves is pushing ahead with this engine. Its commercial value is incalculable."



THE GULOWSEN GREI HEAVY OIL MARINE ENGINE.

One of the successful heavy oil engines now in common use one that is backed by years of manufacturing experience and operation, is the GULOWSEN GREI ENGINE, which is now being manufactured in the large, modern plant in Seattle, U. S. A. as well as at the original plant at Christiania, Norway. In European Countries particularly has this engine enjoyed a distinct popularity in the many varied uses to which it has been put. This has been mainly the result of the progressive policy of the company, including that of placing on the market, an engine of the highest quality, featuring the utmost simplicity in design and absolute reliability under operating conditions.

At present, sizes are being built at the Seattle plant ranging from 30 to 210 H.P. in both 2 and 4-cylinder engines, all of which are identical as to design and construction.

The engine is of the type which operates on the two-stroke cycle principle, using a medium compression of air in the cylinder and a solid injection of fuel oil, ignition of which is caused partly by the compression and partly by the heat retained in the combustion head from explosion to explosion after the engine is in operation. Initial heat for starting is obtained by the use of an electric coil which makes starting practically instantaneous.

Being of the two-stroke cycle principle, there is, of course an entire absence of valves for admission of air and discharge of exhaust gasses in the cylinder, as this is done by means of ports in the cylinder walls. Air for scavenging and combustion is taken into the crank case automatically on the up-stroke of the piston, and there compressed to about five to seven pounds on the down-stroke. The compression in the cylinder just as the fuel is injected is about two-hundred pounds.

The fuel is injected vertically downward from the very top of the cylinder cap towards the mouth of the combustion space, as in this manner the oil is burned completely and only the products of combustion are permitted to expand into the cylinder, thus giving a maximum of power and a perfectly clean exhaust. This is the condition while the engine is running under load continuously, or when the load is thrown off the engine only for short intervals; but in order to insure perfect combustion under prolonged idling, running at very low speeds, and also at starting, a simple arrangement is made of which in addition to the vertical injection, the oil jet can be directed to one side of the combustion space against a hot surface for idling or to the opposite side against the electric coil for starting. Although operation does not call for this adjustment very often, it can be made very easily while the engine is running.

The "GG" type of electric starting coil is so designed and arranged as to give instantaneous and reliable service, with troubles from rapid deterioration of the coil entirely eliminated. The complete electric starting device consists mainly of three parts:—the cage, which is securely fastened to the walls of the cylinder head; the valve head, which can be seated from the inside of the combustion space against the end of this cage and which is operated from the outside by means of a lever through a medium of valve stem and springs in the cage; and the plug, which consists merely of an insulated stem with a six-volt electric heating coil on one end and a binding post and proper means for securing the plug to the cage on the other end. The operation is simple. When the starter is not in use, the valve is seated against the cage, protecting the coil from the heat and explosions in the combustion space and at the same time making it possible to remove the plug while the engine is running. When starting, the coil is heated by throwing the switch from the battery and is uncovered by means of the lever, so that with the direction of the oil jet from the injection nozzle properly arranged, ignition begins the moment the engine is turned over. The engine is turned over by means of compressed air, the control of which is described below.

On each engine there is mounted just aft of the rear cylinder a gear case, covering moving parts, including bevel gears by which the motion is transmitted from the crankshaft to an intermediate shaft and a cam shaft. The intermediate shaft is short and operates a vertical centrifugal-type gover-

nor by means of bevel gears, as well as circulating water and bilge pumps, two small fuel service pumps, a small generator and force feed lubricators. All of the pumps mentioned run at half engine speed, and the bilge pump is of the same type as the circulating water pump and so connected that it can be used in place of the latter should it be necessary. All of these auxiliary parts are mounted on the gear case so as to present a neat and compact appearance.

By means of the cam shaft, the operation of the engine is controlled. The cam shaft is long as compared with the intermediate shaft, as it extends along the front of the engine past the center of the forward cylinder in both two and four cylinder engines. The rear end of this shaft is attached to a lever mounted on the gear case by means of which it can be moved in an axial direction. On it are keyed air starting cams opposite each cylinder and fuel pump cams in pairs between cylinders. The lever is arranged for five positions which are indicated on a sextant guide, the center position being neutral, at which the engine is not in operation. The extreme positions on either side are for air starting "ahead" and "astern," while intermediate positions on either side are for running "ahead" and "astern". By sliding the cam shaft the cams, of course, are moved in such a way as to properly operate the fuel pumps and air starting valves. By means of this system of control, and with the use of the electric starter, starting is accomplished in thirty seconds with the use of very little air. As might naturally be expected from the above description, the "GG" Engine is direct reversible; but the fact that can be most appreciated is that this application is not only extended to four cylinder engines, but to all two-cylinder engines as well. This allows for the elimination of reverse gears and reversible propellers in a great many instances in the case of two-cylinder engines.

In connection with the air starting valve which is mounted on each cylinder, there is an air charging valve by which the air tanks can be charged directly from the engine cylinder while in operation.

The fuel pumps are mounted in pairs between the cylinders, thus being very conveniently placed for making any adjustments or repairs. Several features concerning the pumps are of great help towards continuous running under almost any conditions. First of all the pumps can be packed while the engine is running without even the necessity of cutting any of them out. The fuel strainers are conveniently mounted in the bracket of each set of pumps, and are so designed that both pumps can easily be transferred to any one of the strainers, leaving the other free to cleaning.

The speed of the engine is controlled by the governor which acts through links and levers on wedges inserted under the fuel pump pistons, thus regulating the stroke of the pistons and the amount of oil injected into the cylinders.

The main crank bearings consist of bronze shells, the lower sections of which are babbitt lined and these shells are so constructed that their removal is very easily made without distributing any other part of the engine aside from the caps which hold them in place. These bearings as well as the thrust blocks are water cooled, and as all bearings of the working parts of the engine are made long to provide for generous bearing surface and as the best possible method of lubrication is used, bearing troubles are reduced to a minimum. The thrust is of the horse shoe type, the standard in marine practice.

All two-cylinder engines are provided with either a one-way clutch or a reverse clutch, whichever may be desirable, mounted in the base between the gear case and the thrust blocks. Similar arrangements are made for using a one-way clutch on four-cylinder engines, although in many cases no clutch is used at all and the engine base is shortened up correspondingly.

The general impression gained upon inspection of the engine is the well-arranged system of control, and the compactness and accessibility of all parts.

"GG" Engines are built to conform with the best practices in marine engine design, and all factors that add to the safety and reliability in operation are utilized to the fullest extent. For this reason they are being used for every marine purpose, including passenger boat and tug boat service, as auxiliary power in schooners and on practically every type of fishing craft.

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planned
and
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PORTLAND - SACRAMENTO - HONOLULU
SAN FRANCISCO

SHIPPING LIVE FROZEN FISH.

The Editor of the "Quebec Telegraph" makes the following novel suggestion:—

How many people have thought out the commercial practicability of shipping live fish in a frozen state? The fish do not mind the freezing process at all, so there is no element of cruelty in it. In fact to be frozen alive is the natural winter condition of some fish, though it may not be generally known that freezing live does not necessarily kill them. They belong to the class of creatures that have variable body temperatures depending on the temperature of their environment. In extreme cold they assume a rigid condition, in which all the vital functions are suspended, while life still remains present. During several months of each year some of the great rivers of Siberia are frozen solid to the bottom, but many of the fishes imprisoned in the ice retain their vitality and resume their active life when the ice melts in the spring.

This fact has suggested experiments in the freezing of live fish for transportation. Many years ago a celebrated physicist, Pictet of Geneva, put fresh-water fishes into a tub of water, which he kept liquid at the freezing point for twenty-four hours, and then allowed

to freeze slowly into a solid block of ice. When the ice was melted, a month or even two months afterwards, the fishes began to swim as briskly as they did before freezing and showed no symptoms of ill-health.

Similar experiments were made in France. The fishes were placed in water which had been kept near the freezing point for a few hours, then at the freezing point for fifteen to eighteen hours, and finally frozen by immersion of the vessel into a freezing mixture producing a cake of ice a few inches thick, in which the fishes were embedded. This cake was wrapped in cloth and surrounded with a heat-insulating package to prevent melting during transportation. It is necessary to thaw the ice very slowly and to keep the water near the freezing point for several hours in order to preserve the life of the fishes. Even those which do not survive are in a perfect state of preservation.

Is it not now up to some of our people to construct freezing plants for our principal fishing centres and cold storage on boats and in warehouses, in order to enable us to have live fish upon our markets, even though they may have been captured many months before?

Control your Boats! Save your Cargoes and Money! Keep your Fleet Under Control at all Times!



DEFOREST RADIOPHONE
(Wireless Telephone)

TRANSMITTING AND RECEIVING STATION.

A simple wireless telephone station of modern, efficient design. Carries the voice perfectly; clear and distinct. Varying ranges up to 30 miles. Connects to an ordinary electric light socket. Easy to operate. Requires no highly trained operators. Special installations can be made to meet individual requirements. Get full information at once.

Install a deForest Radiophone (Wireless Telephone) in your boats and have instant, word-of-mouth communication between ships and shore and from ship to ship. Absolutely reliable and dependable apparatus. Not an experiment. An established and successful apparatus now in practical operation for many purposes. Can be installed in any vessel having electricity or gas engine; and mounted in weather-proof cabinets. No operating experience necessary—just talk on the telephone. Inexpensive and it will save its cost in one storm.

Get more complete information at once by writing to

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Our labels are
thoughtfully
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HAVE a Reliable Flashlight to shoot aloft a brilliant signal of distress.

Have a Reliable Battery to ring the warning bell for "Full Speed A'stern."

Have a Reliable Ignition Unit No. 8216 to feed the engine with a steady stream of hot sparks when the "nor'wester" blows—and have an extra one along for emergencies.

Buy the dependable Reliable line now—be prepared when danger threatens.

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THE DOMINION BATTERY CO. LIMITED

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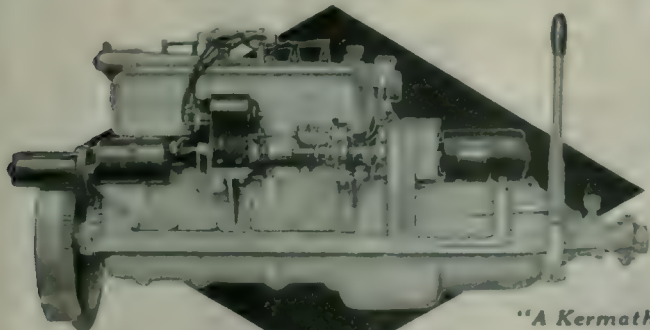
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KERMATH ENGINES ARE EVERYWHERE MEETING WITH A GROWING DEMAND



*"A Kermath
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Isn't it a significant fact that sixty per cent. of the country's boat builders should recommend Kermath Marine Engines.

There must be reasons for such expert endorsement. They tell us they feel safe in recommending Kermath Marine Engines to their customers because they know these engines can be counted on to keep running just as long as oil and gas are supplied—vibration is reduced, thus ensuring long life.

Kermath Engines are offered in a complete line, prices ranging from \$400.00 to \$500.00, according to equipment included.

Ask for new circular. Address Department "M"

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Ninety-five years ago, the nucleus of the Consumers Cordage Company Limited was formed.

In the years from then until now, no effort has been spared to make "Lion Brand" Cordage famous for us and for the buyer.

It's reputation for Quality, Strength and durability is unequalled, and it has gained an enviable position in the Fishing Industry.

If you have never tried "Lion Brand" Cordage, do so once, through one of our Coast to Coast Service Branches, which enables you to procure it promptly anywhere in Canada, and be assured that your ships are equipped with good Cordage that will stand the strain of all weathers.

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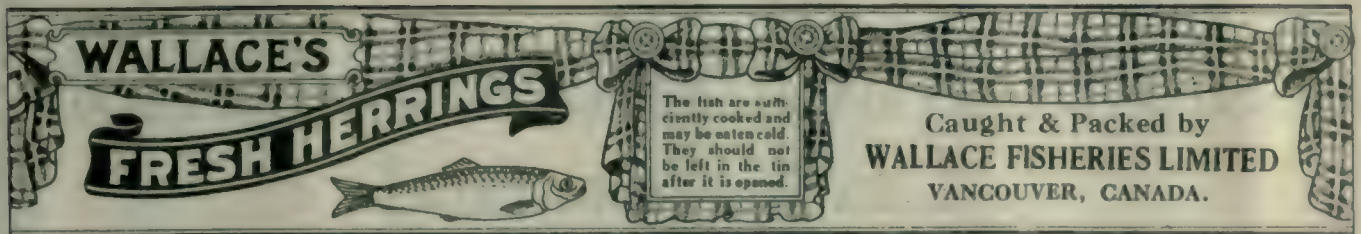
Mills at: DARTMOUTH, N.S. and MONTREAL

Branches at: TORONTO and ST. JOHN, N.B.

Tees & Persse, Limited, Winnipeg, Regina, Saskatoon, Calgary, Moose Jaw, Edmonton and Fort William, Ont. James Bisset & Co., Quebec: Macgowan & Co., Vancouver, B.C.

S
T
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H





Tell Your Customer

That he can sell a case of
WALLACE'S CANNED HERRING

where he sells a can. A man buys a box of apples. Why not a case of canned herring? It will keep indefinitely.

TRY IT.

WALLACE FISHERIES, LIMITED

VANCOUVER BLOCK, - - - - -

- - - - - VANCOUVER, B.C.

FOOD PRODUCTS



Canadian - American - Oriental
Salmon - Herring - Pilchards

Canned Fruits and Vegetables—
Dried Fruits—Fruit Pulp—Milk—
Honey—Jams—Peanuts—Walnuts
—Dried Beans—Pies—Rice—
Tapioca—Whole Spice—Oils—
Tallow—Apples—Potatoes—Onions
—Lumber.

**Canadian Canned
Cured and
Smoked Fish**

O'LOANE, KIELY & CO., Ltd.

HEAD OFFICE: VANCOUVER, CANADA

Associate Offices: Seattle, San Francisco (U.S.A.); Kobe Japan.
CABLE ADDRESS: "BRITSALMON" Bank Reference: The Dominion Bank, Vancouver



CABLE ADDRESS:
"BIR CRAW"
VANCOUVER

BIRKS CRAWFORD & CO.

325 Homer St.
VANCOUVER, - B. C.

CODES:

A.B.C. 5th
BENTLEYS
ARMSBYS

Salmon
Pilchards

CANNED FISH

Herring
Clams

OUR SPECIALTY—ACTING AS BUYER'S CANADIAN REPRESENTATIVES
C. I. F. Prices Quoted

CANADIAN INDUSTRIES EXHIBITION

London, England

June 3rd—17th., 1920

Points for Progressive Cannermen and Exporters

1. Have YOU thought of Exhibiting your goods
2. Are YOU preparing for the Keen Competition ahead
3. Get "IN ON TOP LINE," This is the 1st Exhibition
4. Let your Slogan be "SLOG-ON" Put more "PROD" in your Production.

WE want your Goods WE can place them
WE have ESTABLISHED connections in UNITED KING-
DOM and nearly EVERY COUNTRY in the WORLD.

CANNED FISH

We are in closest touch with Markets and recognised
as Authorities in the Trade

WE want to represent YOU. WE invite CORRESPONDENCE. Get in touch by NEXT MAIL. Better still send us YOUR GOODS to EXHIBIT and let us be YOUR SHOWMEN at this Exhibition, Our Stand Space is limited, but our capabilities and organisations are at your service.

WRITE. "Import Dept",
A. H. PARKER & SONS,

CABLE ADDRESS:-
"Keenest" Bristol.

Produce Brokers

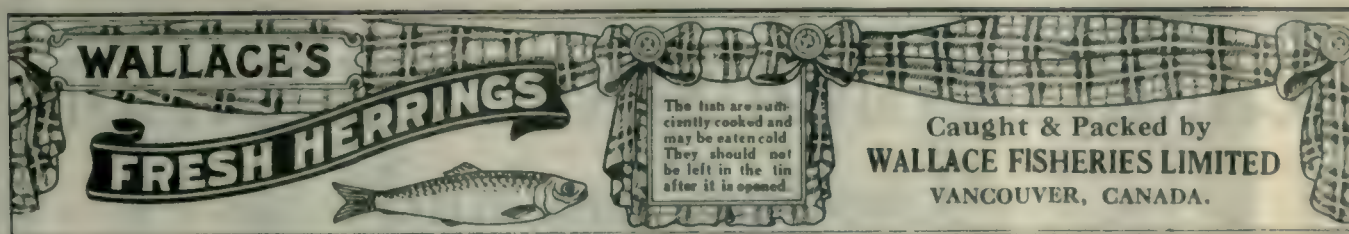
Carlton Chambers, Baldwin Street,
BRISTOL, ENGLAND

BRANCHES

LONDON
9-10 Fenchurch Street,
and 2 & 3 Philpot Lane
London

LIVERPOOL
Produce Exchange Buildings
8, Victoria Street
Liverpool

Also at Glasgow, Cardiff, Newcastle-on-Tyne and Dublin.



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WALLACE'S CANNED HERRING

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 Dried Fruits—Fruit Pulp—Milk—
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 Tallow—Apples—Potatoes—Onions—
 Lumber.

*Canadian Canned
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LIVERPOOL
Produce Exchange Buildings
8, Victoria Street
Liverpool

Also at Glasgow, Cardiff, Newcastle-on-Tyne and Dublin.

W. R. SPOONER

Wholesale and Commission Dealer

FISH OF ALL KINDS

119 Youville Square, - MONTREAL

*I am in the Market at all times to Buy or Sell on
Commission, Fresh, Frozen Smoked and Salt Sea
and Lake Fish in Carload Lots or less.*

CORRESPONDENCE SOLICITED

REPRESENTING

National Fish Company, Limited

Halifax and Port Hawkesbury, N.S.

OWNERS AND OPERATORS

Steam Trawlers—"VENESTA" and "LEMBERG"

"NATIONAL BRAND"

Haddies, Fillets, Kippers,
Bloaters, Scotch Cured Herring

PRODUCERS

Fresh, Frozen and Salt
Sea Fish

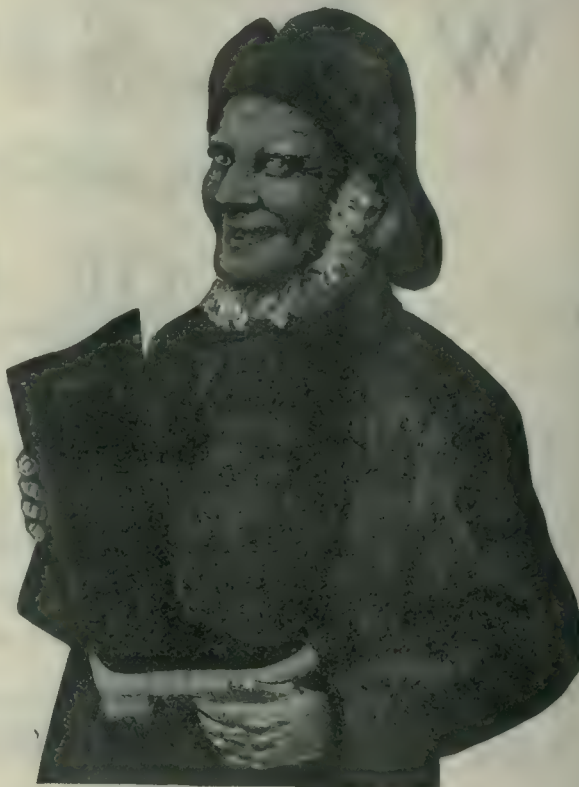
J. Bowman & Co., Port Arthur, Ont.

Wabakin Fish Co., Montreal, Que.

A. W. Fader, Canso, N.S.

Varibest

*Especially
Constructed
for
FISHERMEN*



The All White
AND
White Sole Boots

Manufactured by

The Independent Rubber Co., Limited,
Merritton, Ontario

W. R. SPOONER

Wholesale and Commission Dealer

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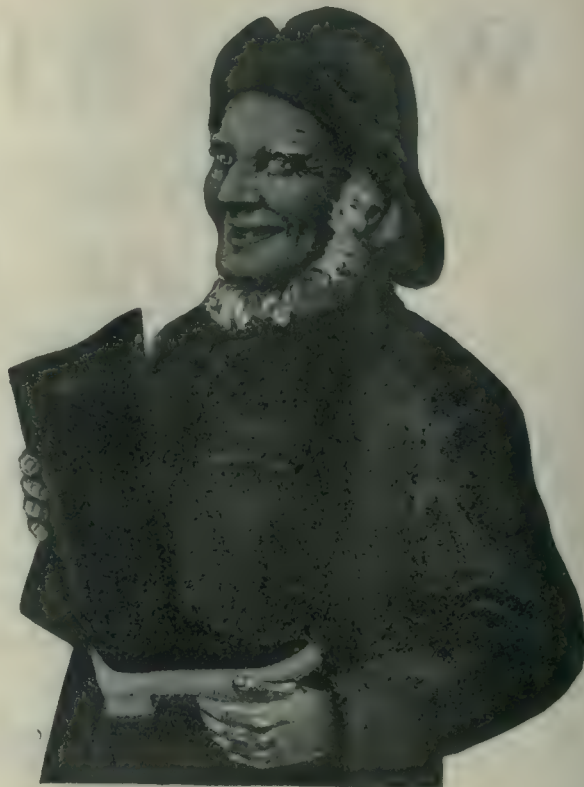
J. Bowman & Co., Port Arthur, Ont.

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Veribest

*Especially
Constructed
for
FISHERMEN*



The All White
AND
White Sole Boots

Manufactured by

The Independent Rubber Co., Limited,
Merritton, Ontario

FISHERIES



BRANCH

In addition to the full statistics of the Fisheries which are published yearly in the Annual Report, the Department issues quarterly bulletins containing statistics of the sea fisheries and general information in regard thereto. Copies of these will be sent free to any applicant.

The value of the Fisheries of Canada is now over \$52,000,000.00 annually.

The demand in the home markets for fresh, fresh-frozen and mildly cured fish is expanding very rapidly. The Department has arranged for the use of refrigerator cars for transporting fish from the Atlantic coast to Montreal and Toronto by a fast train known as the "Sea-Foods Special". On the days on which this service does not operate, the Department pays one-third of the express charges on shipments of fresh, or mildly cured fish from the Atlantic coast to points in Quebec and Ontario. It also pays two-thirds of the railway transportation charges on shipments of fish other than halibut and salmon from the Pacific coast as far east as Manitoba inclusive.

Close Seasons for Fish in Force on December 1st, 1918

Kind of Fish:	Nova Scotia.	New Brunswick.	P. E. Island.	Quebec.
Bass (Achigan).....	.....	.....	.....	1 April to 15 June.
Maskinonge.....	.....	.....	.....	15 April to 15 June.
Ouananiche.....	.....	.....	.....	1 Oct. to 30 Nov.
Oysters.....	b1 Jan. to 30 Sept.	b1 Jan. to 30 Sept.	b1 Jan. to 30 Sept.	b1 Jan. to 30 Sept.
Quahaugs.....	Oct. 1 to May 10 & July 1 to Aug 31.	Oct. 1 to May 10 and July 1 to Aug. 31.	Oct. 1 to May 10 and July 1 to Aug 31.	.....
Pickarel.....	.....	.....	.....	April 15 to May 15.
Salmon (netting).....	Aug 15 to Feb. 28	Aug. 15 to Feb. 28.	Aug. 15 to Feb. 28	Aug. 1 to April 30.
Salmon (angling).....	dAug. 16 to Jan. 31.	dSept 15 to March 31.	Sept. 15 to March 31	dAug. 15 to April 30.
Smelts.....	cApril 1 to June 30.	cMarch 1 to June 30.	cApril 1 to June 30.	dApril 1 to June 30
Sturgeon.....	.....	June 1 to July 1.....	.....	dJune 1 to June 30
Speckled Trout.....	Oct. 1 to March 31.	Oct. 1 to March 31.	Oct. 1 to March 31.	Oct. 1 to April 30
Salmon Trout.....	.....	.....	.....	Oct. 15 to Dec 1.
Whitefish.....	.....	.....	.....	.....
Kind of Fish:	Ontario.	Manitoba.	Saskatchewan and Alberia	British Columbia.
Bass (Achigan).....	a1 Jan. to 15 June.	.....	.....	.....
Maskinonge.....	1 Jan. to 15 June.	.....	.....	.....
Ouananiche.....	.....	.....	.....	.....
Oysters.....	.....	.....	.....	May 1 to Aug. 31
Quahaugs.....	dApril 15 to May 15.	dApril 15 to May 31.	dApril 1 to May 15.	.....
Pickarel.....	.....	.....	.....	See regulations.
Salmon (netting).....	.....	.....	.....	.....
Salmon (angling).....	.....	.....	.....	.....
Smelts.....	.....	Oct. 15 to June 15.	Oct. 15 to June 15.	.....
Sturgeon.....	dSept. 15 to April 30.	.....	.....	.....
Speckled Trout.....	.....	.....	.....	.....
Salmon Trout.....	dOct. 5 to Nov. 30.	dSept. 15 to Nov. 15.	dSept. 15 to Dec. 15.	.....
Whitefish.....	.....	.....	.....	.....

a—Except in Lake Erie west of Pt. Pelee where close season is May 24 to July 15.

b—Except on leased areas, where close season is from 1 July to 31 Aug.

c—Bag-net fishing season Dec. 1 to Feb. 15; gill-net

fishing season October 15 to February 15. Licenses required for bag-nets or gill-net.

d—As many exceptions to the close times above noted obtain, it is suggested to those interested that they procure a copy of the Fishery Regulations applicable to the Fisheries of the Province in which they are interested.

Exceptional Angling == Opportunities ==

are offered by the Province of Quebec, which is the only one that leases exclusive hunting and fishing territories over large area of forest, lakes and rivers both to Clubs and private individuals, with the privilege of erecting camps thereon.

Membership may be obtained, if desired, in many existing clubs, with camp privileges already provided, and often with the right of erecting private summer homes on suitable sites on the club territory.

On all unleased Crown Lands and Waters, angling and hunting are absolutely free to residents of the Province, and the only charge to non-residents is the cost of the non-resident fishing or hunting license.

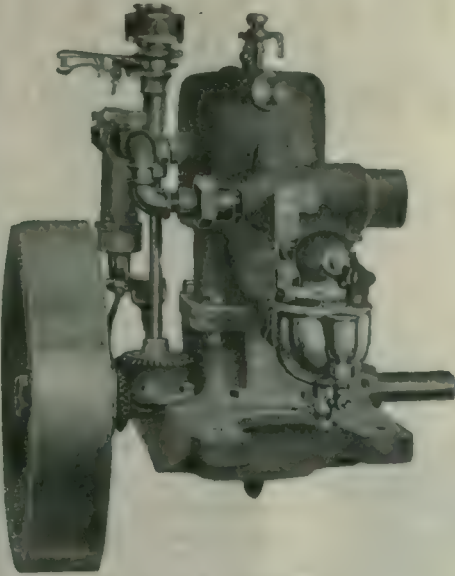
To the Wholesale Fish Trade

The attention of dealers who receive their fresh fish from Portland and other foreign sources is directed to the exceptional opportunities of obtaining their supply from the Baie des Chaleurs and the North Shore of the St. Lawrence, to their own advantage and that of their customers, and to the benefit of the fishermen of the Province of Quebec.

For all information apply to—

**The Minister of
Colonization, Mines and Fisheries
Of the Province of Quebec**

IMPERIAL MOTORS



5 H.P. Model "A"

When you buy an Imperial you are getting an engine backed by years of service so satisfactory that Imperial Motors are the standard fishing boat engines of Eastern Canada and are to be found in every fishing district in Canada and Newfoundland. They are the best that money, skill and experience can produce.

General Dimensions of 5 H.P. Model "A"

Bore of Cylinder	4 1/2 inches
Stroke	4 "
Weight, engine only	230 lbs.
Complete shipping weight, with outfit	420 "
Diameter of Propeller, 2-blade	18 inches
Diameter of Propeller, 3-blade	16 "
Shaft diameter	1 inch
Shaft length	5 feet

For full information regarding this or any other Model send for catalog. State size engine required.

The Motor that Makes the Mark.

BRUCE STEWART & COMPANY, LIMITED.

Drawer 370, CHARLOTTETOWN,

P. E. I.

This Handy Oil Can is Yours for Nothing

Its convenient shape and long spout make it just the thing for oiling hard-to-get-at parts. We have given away thousands to engine owners, simply as a reminder of the superior quality of

White Rose Gasoline

The "higher power" fuel for motor boat and other engines. It "brings you in first" from the fishing grounds.

En-ar-co Motor Oil

The scientific lubricant that adds smoothness and power and prolongs the life of an engine.

Nat onal Frictionless Compound

Finest grease for lubrication of crank-pins, cross heads, valve motions, eccentrics, slides, pillow blocks, main journal and all heavy open bearings.

Scientifically Refined in Canada by

CANADIAN OIL COMPANIES, LIMITED

Sold at the following sea and lake ports:

Halifax St. John Quebec Montreal
Toronto Owen Sound Kingston
Sault Ste. Marie

Clip this Coupon and mail today. Note: Can will not be sent unless you give make of your engine.

Sent Free



Canadian Oil Companies, Limited, 1359 Excelsior Life Building, Toronto, Ontario.

I own (give name above) engine and enclose two 3-cent stamps. Send me Handy Oil Can FREE. Please give nearest shipping point in this province, and quote prices on items I have marked. I will be in the market about

(Give date above).

I use gals. motor oil a year.

I use gals. gasoline a year.

I use lbs. motor grease a year.

I use gals. kerosene a year.

My name is

Address

Postoffice

County

Province

BUY BEAVER BRAND

FROZEN

MACKEREL, HERRING
COD, HADDOCK
and POLLOCK

SALTED

COD, HAKE
POLLOCK and CUSK



Beaver Brand

SMOKED

FINNAN HADDIES,
BLOATERS,
KIPPERS and
FILETS.

All our goods are
prime stock, as every-
thing we buy is prac-
tically alive when re-
moved from the fish-
ing boats and taken
into our plant.



Our plant at Liverpool, N.S.

As we smoke only the
finest grade of Had-
dock, the finished pro-
duct should be of par-
ticular interest to dis-
criminating buyers.
Fish frozen right out
of the water at our
plant at Liverpool and
smoked in a thorough-
ly modern smoke-
house.

New York Office
ARCH 11, BROOKLYN BRIDGE
Telephone Beckman 1873

North American Fisheries & Cold Storage, Ltd.

Plant:
LIVERPOOL
NOVA SCOTIA

E. J. Murphy,
Managing Director

Efficiency, Square Dealing and Ample Capital

are the Strong Points of the

CHAS. LYONS CO., INC.

H. V. LYONS, Pres.

Wholesale Fresh Water Fish Dealers

Specialties:

Sturgeon, Caviar, Eels, Yellowpike, Grasspike,
Whitefish, Carp, Ciscoes and Mulletts also all
varieties of Fresh and Frozen Fish.

26 PECK SLIP

NEW YORK

(ESTABLISHED 1883).

THOMAS ROBINSON

GRIMSBY, England

TRAWLER OWNER, FISH SALESMAN,
FISH MERCHANT

Agent for the sale of
Newfoundland, Labra-
dor and other SALTED
COD and HADDOCKS.

CONSULTING
DIRECTOR to the
CANADIAN FISH &
COLD STORAGE CO.,
Limited, Prince Rupert,
B.C.



Agent for the sale
and purchase of
STEAM TRAWLERS,
etc.

The LARGEST BRI-
TISH IMPORTER of
Canadian Frozen Fish.

Telegraphic and Cable address:—
"RELIANCE, GRIMSBY".

Bankers:—
THE NATIONAL PROVINCIAL
BANK OF ENGLAND LTD.,
GRIMSBY Branch.

CANADIAN EXPORTERS

OF ALL KINDS OF

FISH

SHOULD ADVERTISE IN AND
SUBSCRIBE TO

THE FISH TRADES GAZETTE

12 months.	24/6	including postage
6 "	12/3	" "
3 "	6/1½	" "

Advertisement Rates on Application

CIRCULATES WIDELY THROUGHOUT THE WORLD

Head Office:—Peninsular House. Monument St. LONDON, ENGLAND

Cable Address: Peter Forge, Bilgate, London.

Established over 60 Years

PETER FORGE

(FRED W. FORGE; SIDNEY J. WILLIAMS, Government Auctioneer.)

FISH SALESMAN, LICENSED AUCTIONEER

AND

IMPORTER OF COLONIAL PRODUCE

Agent to H. M. Government.

98, 113, 114, 115 CENTRAL AVENUE

BILLINGSGATE MARKET, LONDON

INVITES CONSIGNMENTS OF

Salmon, Halibut, Haddocks

AND ALL KINDS OF FISH SUITABLE FOR

THE MARKETS OF THE UNITED KINGDOM

Good Prospects for Best Quality FROZEN KIPPERS.

General Offices:—43-45 Monument Street, London, E.C., 3; Colonial Department, 6 The Corridor, Billingsgate Market, London, E.C., 3.

CORRESPONDENCE INVITED. ALL BUSINESS PERSONALLY SUPERVISED BY PRINCIPALS.

Cable Address,

JOHN DONALDSON, Manchester.

Agent to H. M. Government

Established 1864

JOHN DONALDSON

Fish, Game, Rabbit and Poultry Salesman

Salmon Factor

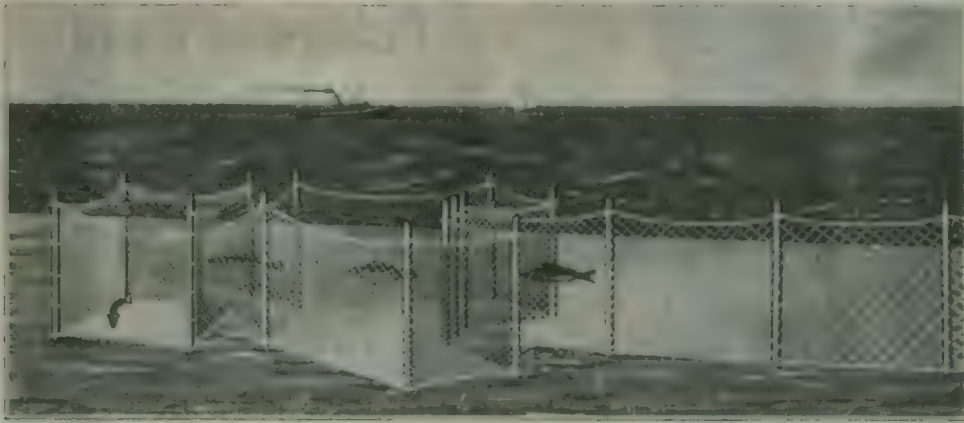
Wholesale Fish Market

MANCHESTER, England.

*Importer of Foreign and Colonial Produce
Consignments of Halibut and Salmon solicited.*

Bankers:

Manchester & Liverpool District Bank.



R. J. EDERER COMPANY CHICAGO, ILLINOIS.

Manufacturers of

COTTON POUND NETTING,

COTTON GILL NETTING,

COTTON TRAP NETTING,

LINEN GILL NETTING,

COTTON SEINE NETTING,

HOOP NET WEBBING,

POUND NETS,

TRAP NETS,

HOOP NETS,

HAUL SEINES,

PURSE SEINES.

Write us for prices.

MANILA ROPE,

SEINE TWINE.

THE ST. THOMAS COLD STORAGE ST. THOMAS, ONTARIO



¶ The only Cold Storage Plant in Ontario specially equipped for the handling of fish.

¶ Located in the heart of the Lake Erie fishing district, maintaining private switches with direct connections on N. Y. C., C. P. R., G. T. R., P. M., and London & Port Stanley Railways.

¶ Smoking plants in connection.

Distributors of

Finnan Haddie, Salmon, Halibut and other varieties of fish

WRITE OR WIRE US YOUR PROPOSITION

Operated by

The St. Thomas Packing Co., Limited



Fishermen's and Shipbuilders' Supplies

Fishermens' Rope

MAITRE CORD
SEAMING TWINE
OAKUM
CAULKING COTTON
PINE PITCH
LIFE BUOYS
LIFE JACKETS
DAKE STEERING GEARS
MOON GENERATOR PLANTS
SPIKES
CHAIN
PAINTS
ENGINE PACKINGS
CEDAR CORKS
TAR TAR REDUCER
NET CLEANSER
OIL CLOTHING
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William C. Wilson & Company

Head Office:

21 Camden St. TORONTO Ontario

GASOLENE

GRAY-PRIOR
FOUR CYCLE
MARINE MOTORS
Built up to a Standard—not down to a price.

KEROSENE

The "D-4" Four-Cylinder Medium Heavy-Duty Type

36 Horse Power

Bore, 4 $\frac{1}{2}$ Inches

Stroke, 8 Inches

A strictly high grade medium heavy duty motor that has earned a reputation for unfailing dependability and economy—a reputation not surpassed by any other motor, regardless of price. Every refinement of design and every improvement in manufacturing processes developed during our sixteen years experience in motor building is concentrated in this Model "D-4" long stroke motor. We have spared neither time, labor nor expense in making it the finest motor of its type that can be produced.

REMARKS

Two Complete and Separate Ignition Systems—Two Sets of Plugs—Diameter of all Crank Shaft Bearings one-half of Cylinder Bore—Planetary Spur Gear Reverse Giving Same Speed Reverse as Forward—Pressure Feed Lubrication Through Drilled Crank Shaft.

"HARTFORD" 2-CYCLE MOTORS

Model "X" Type.

Fishermen, Oystermen, Lobstermen and all other Commercial Boatmen who use open boats in salt water in all kinds of weather, will find the Model X Motor the ideal power for boats from 16 to 36 feet in length.

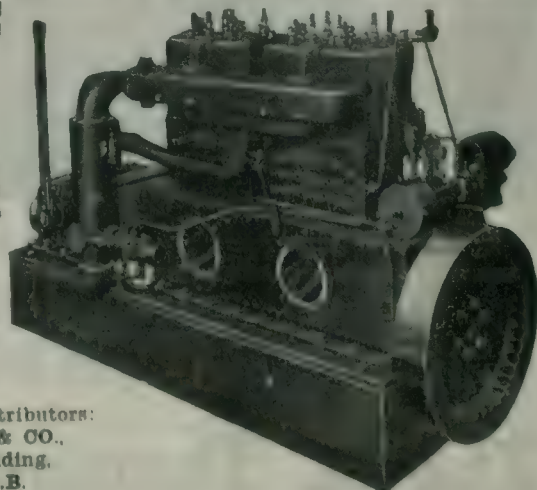
Manufactured and sold by

The Gray & Prior Machine Co.

58 Suffield Street - HARTFORD, CONN., U.S.A.

Eastern Canadian Distributors:
PYKE MOTOR & YACHT COMPANY.
367-371 St. James St.,
Montreal, Canada.

Newfoundland Distributors:
F. G. HOUSE & CO.,
Columbus Building,
St. John, N.B.





Booth Fisheries Co.

OF CANADA, LIMITED

Ocean, Lake and River Fish

Fresh

Canned

Frozen

Salted

Smoked

Prince Rupert
Port Arthur
Wiarton

TORONTO

Kingston
Montreal
Winnipeg

SARDINE CANNERIES

Chamcook, N.B.

St. John, N.B.

All communications should be addressed to the Booth Fisheries Company of Canada, Ltd., Toronto, Ontario; or the Branch Office at 205 No. Michigan Ave., Chicago, Ill.

Salmon**C
A
N
S****Sardine****Lobster****Herring****C
A
N
S****Etc.**

Packers of Canned Fish of every kind will be interested in the variety and sizes of cans manufactured to suit every need of the trade

AMERICAN CAN COMPANY

Hamilton, Ont.

Niagara Falls, Ont.

Chamcook, N.B.

Montreal, Quebec.

AMERICAN CAN COMPANY LTD., VANCOUVER, B.C.**"Brunswick Brand"****HIGH****SEA****GRADE****FOODS****CONNORS BROTHERS, LIMITED***Branch Office:*6 Ward Street,
St. John, N.B.**PACKERS AND CANNERS,****BLACK'S HARBOUR,**
N.B.

License No. 1-603.

Cable Address:

Connors, St. George

Telegraphic Address:

St. George, N.B.

FOR YOUR ENGINE

You Fishermen Must Have
DEPENDABLE SUPPLIES



“GET IT AT McAVITY’S”
if it's



PROPELLERS
STUFFING BOXES
SHAFTING & COUPLINGS
“McAVITY” COMPOUND BATTERIES
SPARK COILS, J. S. or M & B
PRIMING CUPS, TUBING, ETC.

T. McAVITY & Sons Ltd., ST. JOHN N.B.

CANADIAN & AMERICAN FISHERIES, LTD.

LIVERPOOL - NOVA SCOTIA

J. F. CLIFFORD, Managing Director

Wholesale Producer of

SMOKED FISH

Fillets, Haddies, Kippers,
Bloaters.

FRESH and SALT FISH
of all varieties.

Car Load Lots a Specialty



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CANADIAN TRADE CORPORATION, LTD.
EASTERN TOWNSHIPS BANK BUILDING,
MONTREAL

UNITED STATES AGENTS:
J. S. TWOMBLY,
110 STATE STREET,
BOSTON

H. R. SILVER, Ltd.,

Exporters of all kinds of
dry and pickled fish.

Large stock carried, suitable for all markets.

Halifax, - Nova Scotia.

WE ARE BUYING

High Grade Canned Fish
Kipperd Herring
Herring in Tomato Sauce
Canned Mackerel—Canned Clams
Sardines, Lobsters etc.

Quote what you have to offer

Send Samples.

VHAY FISHERIES CO.

Detroit, - Mich.

BONELESS CODFISH

The Brands that are
best known and have
proved most satisfactory are

HALIFAX and ACADIA

Refuse Inferior Substitutes

ROBIN, JONES & WHITMAN, Limited,
LUNENBURG, N.S.

Sold Everywhere

Cable Address: "McZatzman," St. John, N.B., Canada.

Code used A, B, C, Fifth Edition.

MCCORMACK & ZATZMAN

Wholesale Dealers and Curers of
Fresh, Frozen and Salt Fish.

Largest Packers and Curers of
Salt Alewives in Canada.

77 SMYTHE STREET, ST. JOHN N. B.
CANADA

FARQUHAR & CO., LIMITED

Fish Merchants Provision Dealers
Steamships Owners and Agents

EXPORTERS

Pickled Herring	Pickled Salmon
Codfish	Haddock
Pollock	Cod Oil
	Hake
	Lobsters

Farquhar's Wharf, Halifax, N.S.

A. E. HICKMAN CO.

Limited

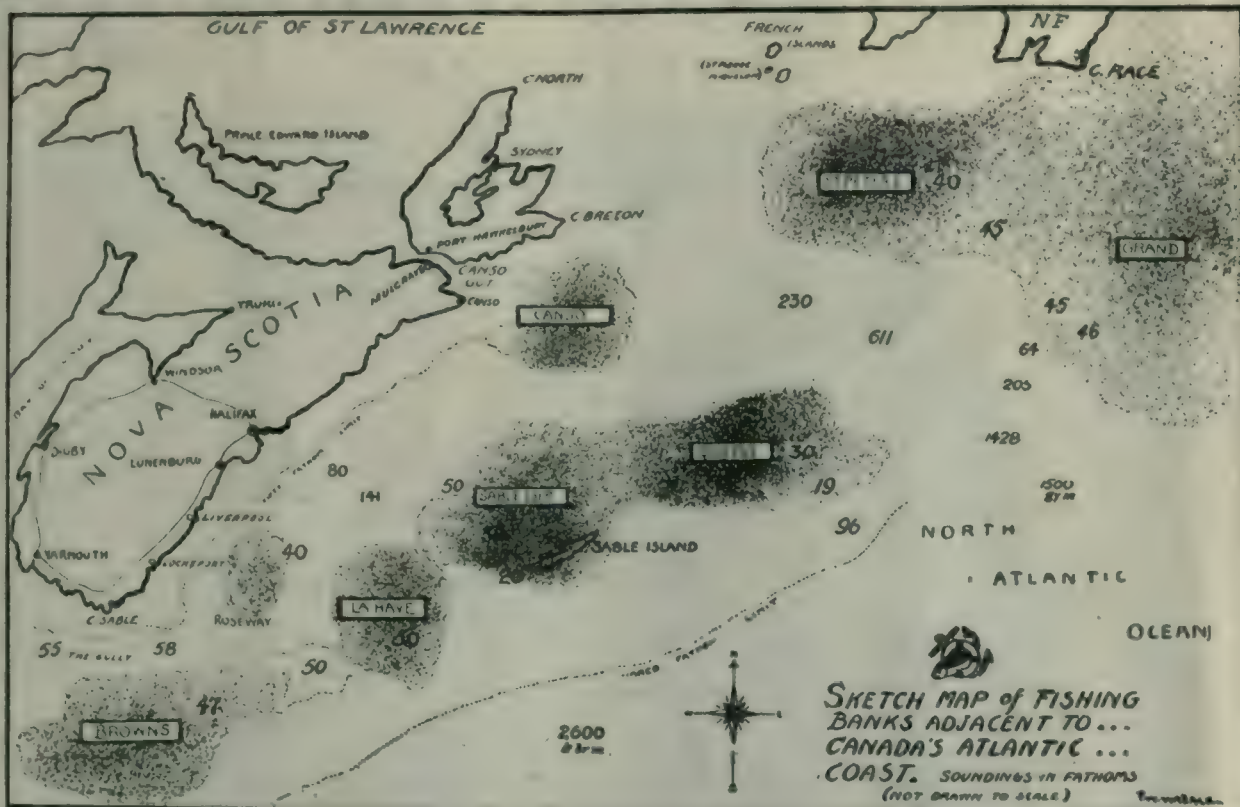
ST. JOHN'S

Newfoundland

Exporters of all kinds of
FISH AND FISH PRODUCTS

Manufacturers and Refiners of
MEDICINAL CODLIVER OIL

The Fisheries of Nova Scotia



Nova Scotia's Enormous Fishery Resources

Afford an Unequalled Market for Buyers of Fish and Fish Products

AND

Wonderful Opportunities for Investment and Employment

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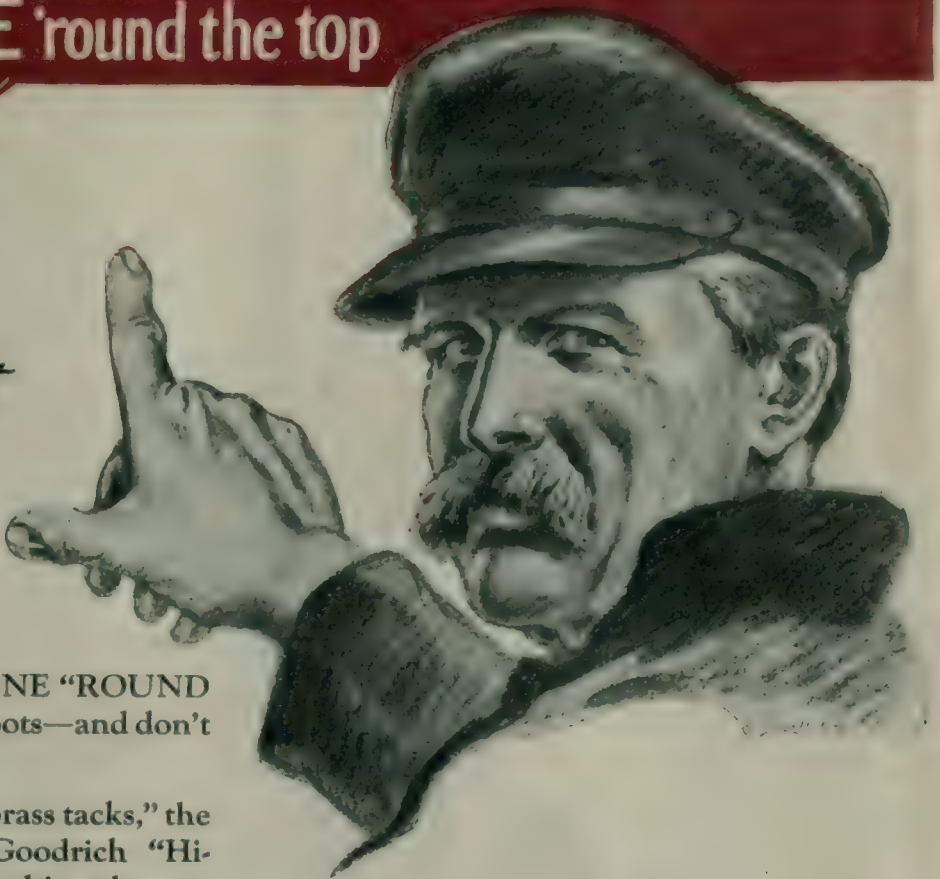
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THE CANADIAN FISHERMAN

Official Organ of the Canadian Fisheries Association

VOL. VII.

GARDEN CITY PRESS, Ste. Anne de Bellevue, APRIL, 1920.

No. 4.

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The following information has been gained from the engine room log book of the "Askelad" covering the first 8 months of operation, from Dec. 1918 to Aug. 1919

Average Fuel Consumption per hour, actual running time, $13\frac{3}{4}$ gallons or 0.53 lbs. per Brake Horse Power. (Total cost of the fuel oil, based on American prices, would have been \$1,111.59. With a coal burning steamer, using coal at \$6.00 per ton, the cost would have been \$3,000—a saving of \$1,900.00 for the Bolinder-engined vessel.)

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Although the British Columbia fisheries show remarkable development in some branches, it may be confidently stated that the Industry is still in the initial stage, for 80 per cent. of the yearly output is credited to salmon, which (with the exception of halibut) is the only fish which has so far been taken in large quantities.

During the year 1917 the value of fish caught and landed in the Province was over twenty-one and a half million dollars (\$21,500,000).

For information regarding British Columbia's Fisheries, write

The Bureau of Provincial Information

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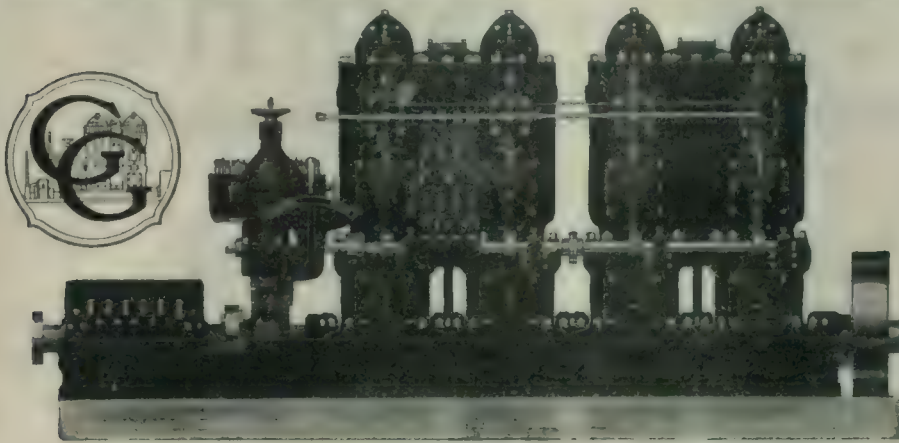
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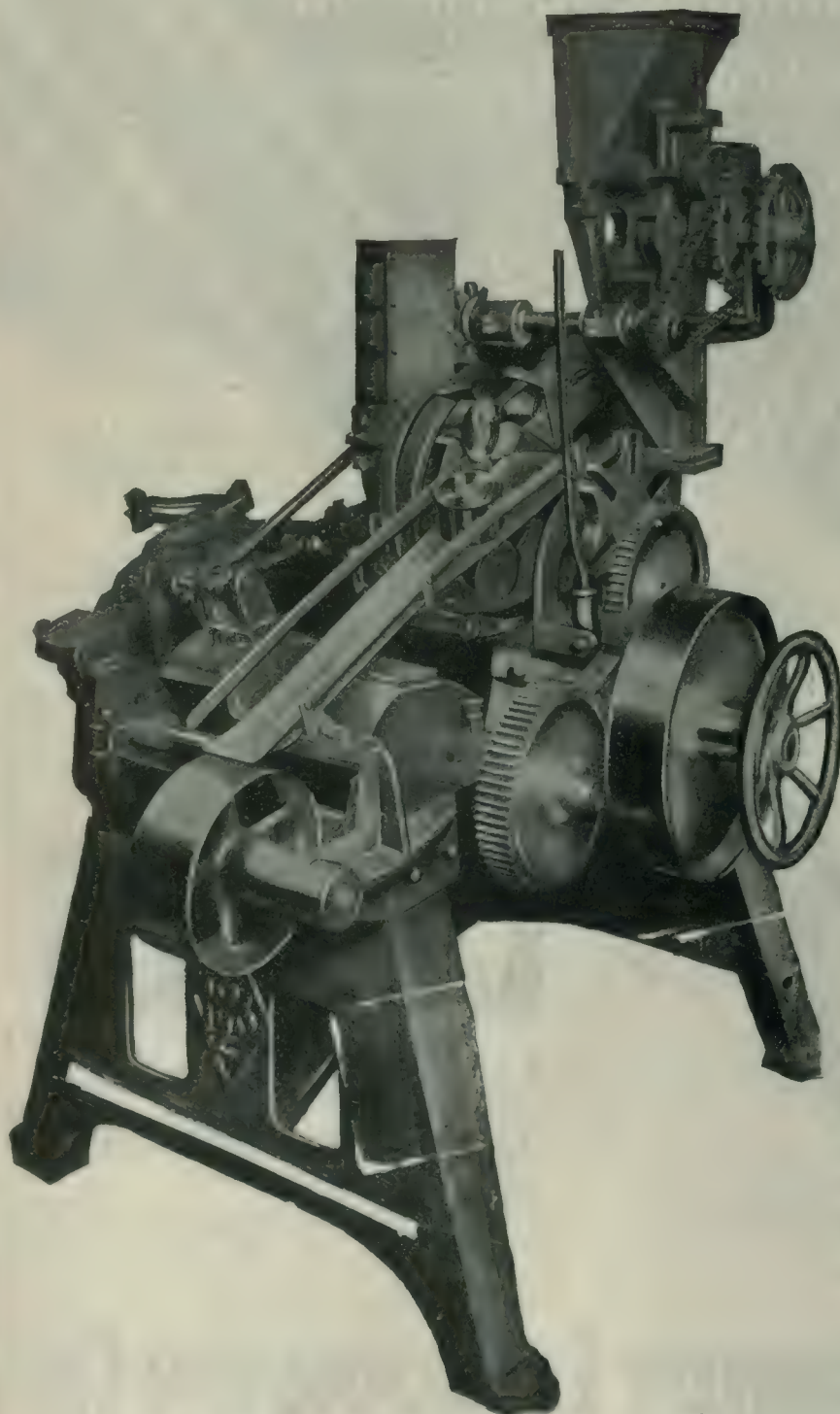
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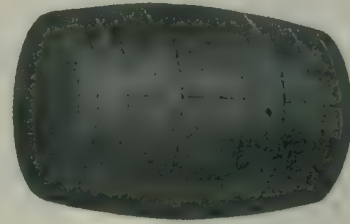
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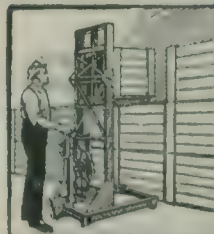
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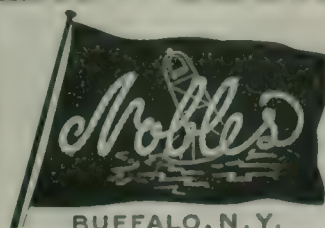
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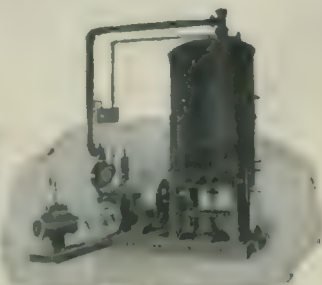
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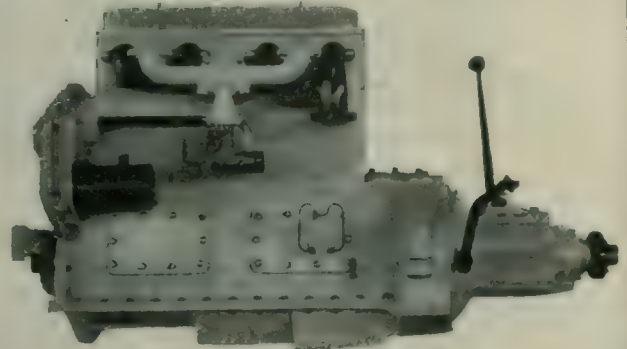
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Mr. Cobb was for 17 years a field agent of the U.S. Bureau of Fisheries, and in the course of his duties visited practically every fishing settlement and packing establishment in the United States many times; later was editor of the Pacific Fisherman, and now is Director of the College of Fisheries, University of Washington.

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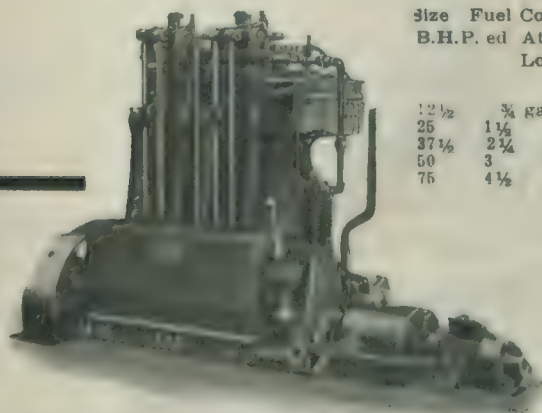
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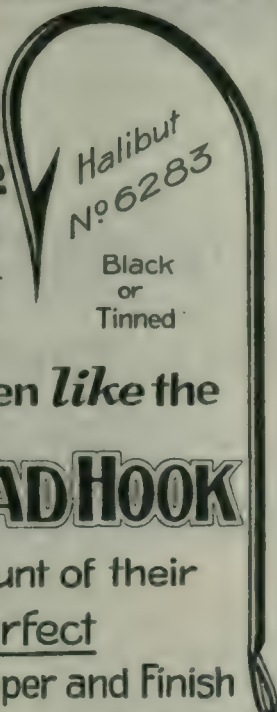
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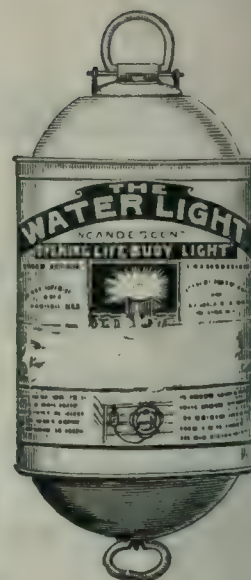
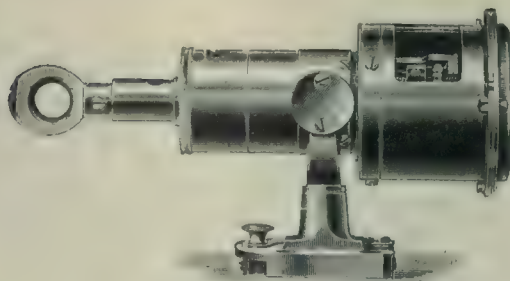
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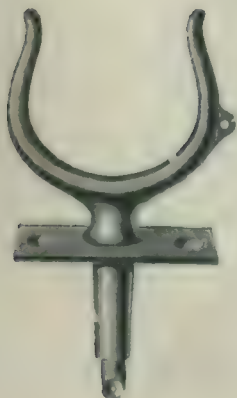
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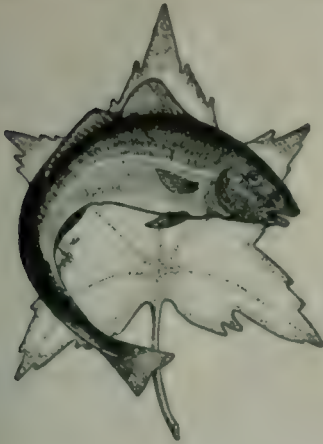
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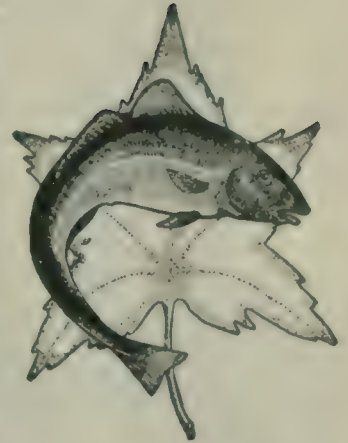
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APRIL, 1920.



FREDERICK WILLIAM WALLACE
Editor



The Suggested Embargo on Pacific Raw Salmon

The Pacific Coast fishing industry are not alone in their request for an embargo to be placed upon the export of raw products which should be manufactured in Canada. The Canadian pulp and paper industry are advocating that a similar restriction be placed upon the export of pulpwood logs. The case of raw salmon and pulp wood logs and the argument in favor of restricted export is practically identical.

It has been argued that retaliatory measures would be instituted by the United States and coal is the product which our legislators and others fear might be cut off as a quid pro quo. While it is a fact that Canada possesses but little anthracite, yet we have areas of bituminous coal only awaiting development and sufficient to more than supply ourselves, and Canadian mining interests are urging greater development of these coal areas in order that Canada might become independent of coal from the United States.

We do not believe for one moment that American business men would advocate any retaliatory measures if an embargo were placed upon the export of raw salmon for manufacturing purposes. They are exceptionally smart business men and, if the positions were reversed, they would advocate exactly the same thing and probably in a more strenuous manner. The advocates of retaliation are invariably politicians who know nothing of economics or business and who bluster forth into illogical mouthings, for political effect, when ever another nation makes a tariff move destined to aid her home industries.

The desire for an embargo upon the export of raw salmon from the Pacific Coast is for the purpose of retaining the canning of pink and chum salmon within British Columbia and the holding of a market for same. Americans interested in the salmon industry of the United States are not surprised at the urging of an embargo by the Canadian cannerymen and when the matter was discussed with them they expressed neither resentment or retaliatory threats. They know that the policy urged is a matter of sound economic business and with no hostile motives implied. If the embargo went through, American cannerymen would pack pinks and chums in British Columbia—a possi-

bility to which there is no objection on our part.

Mr. Frank J. Barnjum, a well known pulp and paper manufacturer of Nova Scotia, produces several arguments on behalf of his industry which is worth perusal by our own. In a recent communication to the Pulp and Paper Magazine, he says:—

"All this talk of retaliatory measures on the part of the American Congress, because the Canadian people decline to be hewers of wood and traders of their birthright for a mess of pottage by shipping the lifeblood of their own paper mills across the border in the shape of raw material, is pure bunkum.

That the United States would be willing or prepared to engage in a trade war with its second best world's customer is, of course, inconceivable and ridiculous. Canada is nearer self-supporting than any other country on the globe, through her own and other British resources.

In the first place, Canada has ample coal deposits for the running of all her industries. It is simply a matter of transportation, and with a magnificent water route from Nova Scotia via the Saint Lawrence River and great Lakes and with rail freight rates continually advancing while water freights will be declining, it will be cheaper to transport coal by water from Nova Scotia than by rail from Pennsylvania.

Secondly, if there is one thing that Canada really has an inexhaustible supply of, it is water powers. If these were developed, as they should be and will be in the near future, and our railroads and industries electrified, we should require very little coal.

There is a vast difference between the United States selling us coal, for which they are glad to find a market so near at hand, and the shipping of wood from Canada; as coal cannot be manufactured any farther, and a cord of wood instead of bringing \$20 to \$25 in its raw state will return a hundred dollars or more when turned into paper.

There is of course, a serious shortage of newsprint paper in the United States, but this also applies to Canada as well, and she is shipping more than 80 per cent of all her paper to the United States to the detriment of her own newspapers, some of which have had to suspend publication on this account.

The American people are not a party to any of this agitation with reference to the Underwood resolution, which is inspired by one or two of the larger companies who have suddenly awakened to a realization that they have only a very small wood supply in their own country and who are simply using the American newspapers, and through them Congress, to try to help them out of a bad hole."

Mr. Barnjum reiterates expressions which we used in a former editorial on the subject—"It does not pay to barter our birthright for a mess of pottage . . . or to be a nation of mere fishermen, miners and lumbermen—looters of our natural resources working for the manufacturers and salesmen of other nations."

DO YOU WANT TO SEE HOME CONSUMPTION OF FISH INCREASED TO THE MAXIMUM? COME TO VANCOUVER AND GIVE YOUR IDEAS.

SOME FACTS REGARDING THE BRITISH COLUMBIA FISHERIES

Delegates and guests visiting the Annual Convention of the Canadian Fisheries Association at Vancouver in June might be interested to know that British Columbia is the premier fishery province of Canada in value of fish produced. Forty per cent of the value of Canada's fisheries come from British Columbia—the figures for the year 1917 being \$21,518,595. Nova Scotia ranks second with a fisheries production value of \$14,468,319.

British Columbia produces five species of salmon valued at \$16,828,783 annually.

The British Columbia halibut catch was valued at \$1,721,012 for the last statistical year.

The herring catch of British Columbia amounted to \$1,192,654 during 1917.

British Columbia produces black, red and grey cod, ling cod, shad, soles, flounders, skate, brill, smelts, oolachons, pilchards, whiting, sturgeon, trout, crabs, clam and oysters.

The value of British Columbia plants, vessels and gear amounts to around \$20,000,000. Twenty thousand persons are engaged in the fisheries.

The pack of British Columbia salmon for the year 1919 amounted to 1,393,156 cases.

Vancouver is the headquarters of more fishing concerns than any other city in Canada.

Fish docks, freezers, cold storage and smoke-houses for fish, salmon canneries and herring packing establishments are located within Vancouver City. The Fraser River with numerous salmon canneries at Steveston and New Westminster is but a short drive from Vancouver.

Prince Rupert is the halibut centre of the North Pacific—fifteen million pounds being landed there during the last statistical year.

DO YOU WANT TO SEE OUR FISHING PORTS FLOURISHING, OUR FISHING FLEETS INCREASING, OUR FISH PRODUCTS IN EVERY MARKET? COME TO VANCOUVER AND LET US DISCUSS HOW THESE THINGS MAY BE BROUGHT ABOUT.

PROGRESSIVE NEWFOUNDLAND.

Newfoundland is blessed with a Cabinet Minister holding the portfolio of Marine and Fisheries who knows all about the industries he is administering. Hon. Mr. Coaker is a practical fisherman and headed the Newfoundland Fishermen's Protective Union for many years, and the fishermen's votes put him into the Legislature. As a practical man and a Cabinet Minister it is interesting to note the insistent manner in which Hon. Mr. Coaker is urging the better cure of fish and compulsory inspection and grading of same. Under his auspices, compulsory inspection and grading will certainly go through.

Newfoundland, like Canada, depends upon export markets for the disposal of the bulk of her fish catch, and in these export markets both countries are up against the active competition of Scandinavian fish—herring and codfish mainly—and our competitor's products are usually first class in every respect.

Says Hon. Mr. Coaker in the "Trade Review" on his return from Europe recently:—

"Iceland dried fish was selling at 20 shillings a quintal over ours," said Mr. Coaker, "and Iceland soft-cured was even a more formidable rival of Labrador. The Iceland fish, from the time it is caught until it is put on the market is handled with great care and cleanliness. It is well-split, well-washed and not a speck of blood is allowed to remain on it. It is split to the top of the tail with about one inch more bone taken out than is done in Newfoundland. The result is, that whiter, drier and a more uniform article is produced.

We must take greater care in splitting and washing the fish. It must be split right down to the tail, washed carefully and the blood washed off and the fins removed. It must be well salted, but not as heavily as the heavily-cured Labrador.

"Much of the shore caplin school fish could be handled in a manner that would compete with Icelandic and Norwegian cured," said Mr. Coaker. "I would say that soft fish made about the end of August or early in September, if treated right, well-split, well-washed and given from 12 to 14 hhd. of salt to the hundred, and five days sun, would compete with the foreign product. The black film should be taken off the napes and the fish washed singly.

"I do not think it would be very difficult to get our fishermen to take this trouble if the great importance of the issue at stake is put before them properly. When they are told that they will have to turn out better fish or else be unable to sell it, I think there would be no difficulty in getting them to produce the article required. There was considerable improvement on last year's cure as compared with 1917 and 1918.

"In washing for salt bulk every fish should be handled singly and the back washed as carefully as the face. It should get about 18 hhd. to the hundred and at least three days sun. The North Sea grounds will be in full competition this year, and after a five-year rest no doubt fish will be plentiful.

"There should be a strict inspection of every cargo of Labrador exported. Buyers on the other side would take our 1920 catch on outright purchase if they can be assured of the good quality of the fish. A government inspection certificate is what is required. We must do away with the talqual system and standardize our fish or else we will be beaten in the race by our competitors. The exporters are largely blameable for the present state of affairs.

"There are 80,000 quintals of fish in Spain, 50,000 of which should be in Italy as it is unsaleable at fair prices in Spain. This is a sample of how losses occur by not sending the right fish to the right market.

"We must make up our minds to give all markets better fish. We must have inspection and certificates with standards 1, 2, and 3. Outright selling price should be fixed by the Fishing Department and all claims should be adjusted by the Trade Commissioner on the spot and paid immediately.

"We have, I trust, come to the end of bad-curing and careless handling of our fish and this year will see a new era in Newfoundland, quality which will put us in a position to compete with any fish going to the markets."

In our own House of Commons, a Fish Inspection Act is being chewed over by some of our Parliamentary solons. It was first brought out in 1914 and it hasn't been able to get past the barrage of political knockers in spite of the fact that all the producing and exporting firms have urged compulsory inspection and grading for years.

If our Inspection Act is killed again, the men responsible should be sent to Newfoundland to learn the fundamentals of framing legislation for the benefit of industry and incidentally for the good of the country at large.

**YOU'LL NEVER REGRET GOING TO VAN-
COUVER, JUNE 3rd, 4th, and 5th.**

CRITICISMS OF DEPARTMENTAL OFFICERS.

Parliamentarians and Government officials are open to criticism. With regard to the latter a favorite phrase in the mouths of critics, politically or otherwise inspired, is "What do they know about the fish business? They were never actually in the trade." According to these critics, a Government officer should be appointed from actual fishermen or fish dealers.

We, ourselves, have criticised the administration many times, but justly and according to our lights. But at the same time we feel that it is only fair that a good word be said in favor of the officers who administer the fisheries to the best of their ability.

Departmental officers must be men of intelligence, discretion and good judgment, and for the work they are called upon to do (We are speaking of the Fisheries Department) their remuneration is none too high. This latter fact and the strict routine of the Civil Service is such that if the present incumbents were dismissed to-morrow and applicants invited from the fish trade to fill their places, we would be safe in saying that no more suitable persons could be secured.

The man who might make an ideal fisheries official is not to be cajoled into serving the public. He can do better by keeping out of the Civil Service. Those who would come forward are most likely to be theorists and business failures and the last men in the world to make good as administrative officials of a great natural resource.

A fisheries administrator is called upon to know a great deal more about various matters incidental to the fisheries than any one business man in the industry is likely to acquire. The multifarious Departmental regulations, fishery laws, etc., would call for the brains and acuteness of the fabled Philadelphia lawyer to understand and become familiar with, and the Departmental officers must acquaint themselves with these and all branches of Canada's fishing industry. How

many men are there in Canada today who can claim expert knowledge of say—the Pacific Salmon canning industry, the fresh fish business of the Atlantic, the dried fish export trade, and the lake fish business? Not very many, we'll say, but officials of the Fisheries Department are expected to have a fair knowledge of every fishery activity in the country. Most men in the fish business of Canada are experts in their own particular line but other lines are a closed book to them.

No man with expert knowledge wants a Government "job" today at the salaries offered. Experts are deserting the Government service every day and going into private business, and the conscientious, hard-working officials who are "standing by the ship" deserve credit for doing so when almost all of them could do better by leaving. As Government officials they are disciplined by routine and red tape—not of their own volition—and they must face the criticism of every disgruntled voter and politician who wants to slam them, and they cannot answer back. Their ancestry, qualifications, history, family connections, etc., can be bandied back and forth across the floor of the House of Commons, and all the world can find out what salary they are receiving by looking up the Auditor-General's Report.

We do not altogether believe in this theory of practical men being the best administrators. The brightest men in the Fishing Industry of Canada today are not the ones who had fish scales on their cradles. A goodly number of the brightest and most progressive never thought of fish until after they had reached man's estate. The clever fisheries official is the man endowed with good judgment who can think broadly and who is not cursed with a single track mind. If he wants expert advice, he can get it from the trade at any time. His function is largely that of a Judge who can weigh the pros and cons of a case and render a decision in the best interests of the industry and the country at large. We want fishery officials with brains rather than expert knowledge. Bill Jones may know all there is to know about codfish and be unable to write his own name, Would Bill make an ideal Superintendent or Chief Inspector of Fisheries?

We have criticised just as much as anybody and there is no guarantee that we won't commit the offence again. We have made the criticisms of the past from our own point of view and none of us are infallible—neither are the officials of the fisheries department. But we believe in fair play to the short-staffed, hard worked officers of our fisheries administration. We know it is not the best administration but this is largely the fault of the parliamentarians who refuse to recognize the growing needs of the fishing industry and allow the necessary appropriations of money for the enlargement of staffs and the more adequate carrying out of the work which should be done.

AN OTHER ATLANTIC TRAWLER GONE.

Nemesis seems to be pursuing our Atlantic otter trawlers. The loss of the wooden trawler "M.F.B." which evidently opened up and foundered on the Banks early in April makes the third loss in the otter trawl fleet—the others being the trawlers "Promotion" and "Jutland." All of these craft were wooden vessels. A regrettable feature of the "M.F.B." disaster is the loss of life which accompanied it—eight men having failed to make the land after abandoning the trawler in the boats.

NEWFOUNDLAND A TRADE RIVAL.

Newfoundland is forging ahead in fisheries development. Her Minister of Fisheries is advocating compulsory inspection and grading of dried fish and there is every likelihood of the measure going through.

We also read in the "Trade Review" that the Atlantic Fisheries Co., who bought out the Reid-Newfoundland Coy's cold storage plant at St. John's N. F., "intend to carry on a large business in smoked herring, salmon, haddock, capelin, etc.,"—same to be marketed in the United States and Canada. When Newfoundland begins to plan marketing smoked fish in Canada, it looks as though something was lacking on the part of ourselves.

Newfoundland canners are going into the canning of codfish and one packer is said to have secured an order for 5,000 cases in the United States. The price is reported as being from \$10 to \$12 per case of 48 one pound cans.

Our sister Dominion will possibly act as a spur to awaken our legislators to action on standardization and inspection. If we don't have something of the kind, we can't hope to retain foreign markets in the face of aggressive competition.

DO YOU WANT TO SEE CANADA, THE GREATEST FISH PRODUCER IN THE WORLD? COME TO VANCOUVER AND HELP FORMULATE PLANS FOR THAT PURPOSE.

FISHING VALUES AND STATISTICS FOR 1918.

The following figures represent the value only in first hands. The total value will be practically 100 per cent more.

The total value of the catch of the sea fisheries in 1918 to fishermen at the point of landing aggregated \$32,741,998, in comparison with \$29,373,022 in 1917. The quantity and value of the principal commercial fish landed were as follow:—Salmon, 1,529,925 cwt., \$9,378,018; cod, 2,206,666 cwt., \$7,867,670; halibut, 207,139 cwt., \$3,131,651; herring, 1,764,223 cwt., \$2,295,611; lobsters, 264,096 cwt., \$2,123,406; haddock, 554,366 cwt., \$1,851,137; sardines 295,770 cwt., \$1,479,050; mackerel, 196,779 cwt., \$1,354,400. The value of the catch by provinces was as follows:—British Columbia, \$13,632,828; Nova Scotia, \$10,759,974; New Brunswick, \$4,241,773; Prince Edward Island, \$822,241; Quebec, \$3,285,182.

Canned Fish.—The total pack amounted to 2,107,462 cases, valued at \$18,683,759, made up as follows:—Salmon, 1,633,849 cases, \$14,067,249; lobsters, 107,812 cases, \$2,244,690; sardines, 177,193 cases \$1,227,988; herring, 73,060 cases, \$421,399; pilchards, 63,693 cases, \$336,225; haddock, 28,360 cases, \$227,107; clams and quahaugs, 16,809 cases, \$101,990; miscellaneous, 6,686 cases, \$57,111.

Canneries.—There were 939 factories and canneries in operation in 1918, as compared with 982 in 1917, resulting from the temporary closing of some of the lobster establishments.

THE VANCOUVER CONVENTION WILL GIVE US A CHANCE TO CLEAN UP THE LOOSE ENDS OF THE INDUSTRY AND LAY OUT A NEW COURSE ON PROGRESSIVE LINES.

FORKING FISH TO BE CONDEMNED.

An excellent photograph in the February issue of our esteemed contemporary "The Fishing Gazette" showed two fishermen holding up a number of haddock on the pitch-forks commonly used for handling fish. The photograph was published as a splendid example of how fish should NOT be handled and we immediately wrote to our Federal Fisheries Department suggesting that they secure a copy of the "Fishing Gazette" photograph and have a poster made and distributed in every fish plant in the country, and to have suitable captions on the poster urging the forking of fish be discontinued.

At the same time we suggested to the "Fishing Gazette" that they approach their own Fisheries Administration and have a similar poster made and distributed in the fish warehouses and docks of the United States—thus making the campaign against fish forking international.

We are pleased to report that the Canadian Fisheries Department are having the poster printed and we note in the April issue of the "Fishing Gazette" that they have taken the lead on their side of the line and induced the U. S. Bureau of Fisheries to do the same. Co-operative work of this nature between Canada and the United States is in the best interests of the North American fisheries.

In writing the "Fishing Gazette" we made the statement that we "calculated that fish caught by schooner and dory were forked about 14 times from sea to consumer. The effect of this continual prodding on the tissue of the fish and the bacteriological action set up by the insertion of dirty fork tines may be imagined." In the April issue of the "Gazette" Dr. H. M. Smith of the U. S. Fisheries Bureau, bears out our statement when he states that fish "frequently receive from nine to twelve pitch-forkings. Each time the pitch-fork enters these fish a fresh bacterial infection of the flesh results."

There are a number of Canadian firms who will not allow fish to be touched by a fork, but there are a host of others who are not so particular. These others are the one who should realize the damage pitch-forking does, not only to the fish, but to the business.

A CORDIAL INVITATION TO ATTEND THE CONVENTION AND PARTICIPATE IN THE BUSINESS AND PLEASURE IS EXTENDED TO EVERY PERSON ENGAGED IN THE FISH TRADE, WHETHER MEMBERS OF THE ASSOCIATION OR NOT. DO NOT WAIT FOR A WRITTEN INVITATION.

J. J. Cowie, Pickled Fish Expert of the Fisheries Department, is in the Maritime Provinces consulting the trade with reference to the Fisheries Inspection Act now before the House of Commons.

Fishermen landing at Prince Rupert report great numbers of fur seals on the Yakutat grounds, and a fine five year old bull was caught on a fisherman's troll recently in the Hecate straits. It is believed that he saw the herring shining and went down and made a grab for it, as the hook was fast in his jaw. His stomach was empty but he was very fat, and in much better condition than young bulls usually are a few months later on.



To the Fishing Industry



VANCOUVER CONVENTION

June 3rd, 4th, 5th

Advices from the Vancouver Committee show that they have matters well in hand for a rousing Convention. A large fund has been raised for entertainment purposes and the Chairman of the Committee writes:—"We are able to take care of from four to five hundred delegates and guests. We want every person engaged or interested in the fishing industry to come to Vancouver in June. It will be the biggest thing that ever happened in the history of our Fishing Industry."

A first-class programme of entertainment has been arranged for the gentlemen and the ladies, and the business programme is exceedingly important and broad in its scope. The guests invited include every Member of Parliament for fishing constituencies; all fishery scientists and biologists of renown in Canada and the United States, and administrative officials from Canada, the United States, Newfoundland and Great Britain.

Some of the items on the business schedule are:—

An International Scientific Fisheries Council.

Standardization of North American Fish Names.

Advisability of establishing Advisory Fishery Boards.

A Progressive Policy of Canadian Fisheries Development.

Transportation and its relation to the Development of the Fishing Industry.

Publicity for Increasing Home Consumption of Fish.

The value of Fishery Colleges.

Fish Culture.

The Salmon Fisheries of the Fraser.

Standardization and Inspection of Fish Products.

The Embargo on Raw Salmon Question.

Enemies of the Pacific Fish.

You are undoubtedly interested in several of the above matters and it behooves you to be present and give your views. The coming Convention will be the first Canadian Fishery Congress ever held in peace times. Prior to the organization of the C. F. A. in 1915, the Canadian Fishing Industry were never able to get together for mutual benefit. Since the C. F. A. came into being, we have become an organized industry, with an association consulted by the Government as a representative body. The Association has done more for the fisheries in the past five years than they ever did for themselves. This peace-time Convention in Vancouver is the gathering where we can formulate definite policies for submission to the Government and the administration are looking for our resolutions for guidance. **YOU CAN'T AFFORD TO STAY AWAY IF YOU ARE INTERESTED IN YOUR BUSINESS AND WANT IT TO GROW.**

TEN GOOD REASONS WHY YOU SHOULD ATTEND THE VANCOUVER MEETING.

(1) You need a holiday.

(2) Your wife (if any) needs a holiday too. Bring her along.

- (3) You will visit the wonderful Pacific Coast under the best auspices. You get the advantage of cheap rates: you'll be in company with a good congenial crowd, and you'll be feted and entertained like a Prince by our Pacific friends.
- (4) You'll learn a lot as to how they do business on the Pacific Coast and you'll meet personally the men you do business with.
- (5) Our industry demands that everybody in it get acquainted with each other—not alone for the business but for team work in developing our fisheries and protecting the trade against discrimination and adverse legislation.
- (6) You'll meet the officials who administer the fisheries and you'll listen to thoughtful speeches and papers by men who know what they're talking about.
- (7) You'll have a chance to express your ideas on matters close to your heart and to back up the things you want to see carried out. You owe this to your own business.
- (8) Administrative Departments, Parliamentarians and others are looking to the Fisheries Convention for the opinions and attitude of the Fishing Industry on important questions. This is the first Peace Time Convention—a Convention where recommendations can be made without "ifs" and uncertainties of war days. Apart from the pleasure aspect of the Convention, your presence at the gathering is part of your year's business—just as necessary as a selling or buying trip.
- (9) Our Pacific Coast friends expect a representative from every fish dealing firm in Canada. Don't you be the one not represented.
- (10) And not the last. We want you to get acquainted with the work your Association is trying to do. We want you to meet and talk with your Executive. We want you to cast your vote for the men best qualified to speak and act for the fishing industry. We want your opinion on many important questions. We want you to get behind your Association and build it into an organization as powerful and as honorable as the ancient British Fish Mongers Guilds, and with as enthusiastic membership as the Rotarians, the Kiwanians and the Manufacturers' Association. You can do this if you come to Vancouver.

THE INVITATION OF OUR VANCOUVER FRIENDS IS OPEN TO ALL ENGAGED IN THE CANADIAN FISHING INDUSTRY WHETHER MEMBERS OF THE ASSOCIATION OR NOT.

TRANSPORTATION.

The Canadian Pacific Railway and Canadian National have agreed to issue fares to our members and their friends and guests travelling to attend the Convention at Vancouver on June 3rd, 4th, 5th. These fares are as follows:—

Return First Class Montreal to Vancouver.....	\$137.70
" " " Toronto to Vancouver.....	\$111.80
" " " Winnipeg to Vancouver....	\$ 73.75
" " " Halifax to Vancouver.....	\$171.40
" " " St. John, N.B. to Vancouver	\$162.60

Inclusive of War Tax. Other points in proportion. Tickets on sale, May 15th. Tickets good for stop-over anywhere and good until October 31st, 1920. Tickets good for return by way of Prince Rupert on payment of small extra fare to cover steamship journey.

BERTHS ON SLEEPING CARS.

We are quoting herewith the rates from Montreal to Vancouver. Other points will be in proportion. These are the rates at present in effect and are, of course, subject to change.

Lower Berth Montreal to Vancouver one way..	\$18.70
Compartment Montreal to Vancouver one way..	\$52.80
Drawing Room Montreal to Vancouver one way	\$66.00

NOTE:—TWO PERSONS CAN TRAVEL ON A ONE BERTH TICKET IF THEY TAKE TRAIN FROM ONE POINT. A DELEGATE AND HIS WIFE CAN TRAVEL IN ONE LOWER BERTH FOR ONE LOWER BERTH FARE.

HOTEL VANCOUVER.

The C. P. R. Hotel Vancouver has 650 rooms and is one of the finest hotels on the North American Continent. The charges are \$2 per day and up for room only. Meals are a la carte at regular dining room or lunch counter cafe.

RETURN JOURNEY.

It is to be hoped that as many delegates as possible will return by way of Prince Rupert. The steamship journey up the British Columbia Coast is a wonderful experience and Prince Rupert offers many attractions, not alone for scenery, but as a great fishing port with splendid plants. The Association has received the following telegram from the Prince Rupert Board of Trade:—

"The Prince Rupert Board of Trade cordially invite the members of your Association to visit this city en route. If you will notify us when and number of persons who will come this way we will arrange to entertain them whilst in this city. We believe the many different branches of the industry which will be in operation at the time of your visit should greatly interest the members of your Association."

Arrangements could be made in Vancouver for delegates to return via Prince Rupert and those who can spare the little extra time are urged to do so.

WHAT TO DO IF YOU ARE ATTENDING THE CONVENTION.

First of all reserve your Hotel accommodation at Vancouver. The Secretary of the Vancouver Branch will do this for you if you will wire him your requirements. His address is

F. E. PAYSON,
Canadian Fisheries Association,
528 Winch Building,
Vancouver, B. C.

As there will be a tremendous rush of tourists and others to Vancouver this summer, you are advised to wire your reservations as soon as possible.

Next secure your railroad berth. Do this through your local agent. He will do this for you free of charge. The Montreal delegates plan to leave by the C. P. R. TRANS-CANADA LIMITED leaving Montreal at 5 p.m. on Saturday, May, 29th. This train is an express, and makes the trip to Vancouver in 92 hours—arriving in Vancouver at 10 a.m. June 2nd—a day before the Convention opens. **YOU ARE ADVISED TO BOOK YOUR BERTH RIGHT AWAY WHATEVER WAY OR TIME YOU TRAVEL AS TRAFFIC WEST WILL BE HEAVY.**

You will be met in Vancouver by the local Reception Committee and transported to your Hotel.

It was not possible to arrange for special train or cars as a number of the delegates are leaving for the Coast earlier and stopping over at various points.

DON'T FORGET TO RESERVE YOUR HOTEL ACCOMODATION AND RAILROAD BERTH AS TRAFFIC WEST WILL BE HEAVY.

SEE YOU IN VANCOUVER! JUNE THIRD, FOURTH and FIFTH.

WANTED, FOG HORN TO PROTECT LIVES, AT AMPHITRITE POINT, BRITISH COLUMBIA.

A large number of fishermen operate in the vicinity of Amphitrite Point, on the West Coast of Vancouver Island. For about three months out of the year it is extremely foggy in this locality every day of this period. For some time past endeavors have been made to have a fog horn on this point, and now there is a movement on foot to have a petition signed by everyone interested and sent to Ottawa with the idea to have some kind of warning apparatus installed at Amphitrite Point. No doubt the authorities at Ottawa will take action to protect the lives of the fishermen, who operate in this locality, as it is one of the most dangerous on the British Columbia Coast, at certain times.

FISHERIES DEPARTMENT ESSAY COMPETITION UNDERWAY.

Assistance of the Trade is Sought to Ensure Success.

The contest instituted by the Fisheries Branch among pupils of Domestic Science Schools throughout Canada is already in full swing.

The schools interested throughout Canada have been circularized to this effect: the Department offers a prize of \$25.00 in each Province for the best original recipe from the standpoint of economy for the preparation of any of the following fishes:—

Atlantic codfish, mackerel, pollock, haddock, finnan haddie, black cod, salmon, herring, flatfish (Pacific or Atlantic), whitefish, lake trout, pickerel or dore.

In addition to these prizes there is another award of \$25.00 for the best contribution from all parts of the Dominion.

By means of this contest the Department hopes to develop a greater interest in the value of fish among those who are developing into our future housekeepers. It is hoped that the retail fish merchants and others will take advantage of this contest and co-operate with the Department to their mutual advantage. Merchants might advertise, for instance, that certain fish stipulated in the contest are obtainable at their store; they might offer to give advice or offer to show how fish should be handled, or some other such scheme. Individual co-operation will have a whole lot to do with the success of this contest.

"GO WEST, YOUNG MAN, GO WEST!" AND WHEN YOU GO WEST, MAKE IT VANCOUVER, JUNE 3rd, 4th, 5th.

FISHERIES PUBLICITY DEPARTMENT WILL PHOTOGRAPH FISHING INDUSTRY.

Arrangements have been completed between the Publicity Division of the Fisheries Branch, and the Exhibits and Publicity Bureau of the Department of Trade and Commerce which has charge of all the moving and still photographic work of the Government, whereby an expert camera man will spend two or three months in the Atlantic provinces, beginning the 1st of May, for the purpose of filming and making suitable still pictures of the various phases of the Atlantic industry. A programme is being arranged now, and the Department hopes to secure a complete picture of the herring industry, mackerel, lobster, cod and other phases which may suggest themselves as the work develops.

Comparatively few among the producers, it is feared, really appreciate the value of moving pictures as an advertising medium. At the recent convention of the Lake Erie Fishermen's Association delegates got some inkling into the efficacy of this medium through the splendid address of Mr. Johnson.

These films of the Atlantic industry will be shown in all parts of Canada, and eventually will be screened in various parts of the world, thus bringing to the attention of millions of people the extent of our fisheries, and how they are handled.

It is trusted, and there is little doubt that such will be the case, that producers and fishermen in the Maritime Provinces will lend every assistance to the photographer, and do all they possibly can to make his undertaking a success.

MACKEREL SCOUT CRUISER TO OPERATE THIS SPRING OFF ATLANTIC COAST.

Ottawa, April 12th, 1920.—Atlantic fishermen will be deeply interested in the Government announcement that a mackerel scouting cruiser, equipped with wireless, is to be sent out this spring to locate the mackerel schools. This decision has been made in the hope that the fishermen will profit by this information, and that the industry from our Canadian shores will be stimulated.

As is generally known, mackerel make their first appearance over the western end of Nova Scotia each spring, about the 10th of May. They move along the coast in two or three separate paths, one being well out to sea; another further inland, and the third along the coast. The schools seem to converge in the vicinity of Canso, and then make their way around the eastern shore of Cape Breton in the Gulf of St. Lawrence. It is regarded as one of the best spawning areas.

There is no certainty as to which of the courses the largest body of fish will take, and the function of this scouting cruiser will be to set out from Cape Sable about the 8th of May and cruise in an area to cover the three possible paths, about 40 miles in width, in order to locate the main body of fish. By wireless this information will be communicated to Halifax, and from there distributed by telegraph to Yarmouth, Shelburne, Lunenburg, Halifax, Canso and Barrington, and from the latter place by telephone to Wood's Harbour, Clark's Harbour, and Port la Tour.

It is anticipated that this information will be a tremendous help to the fishermen, and if occasion arises the scouting cruiser bulletins will be given wider circulation.

After locating the schools the cruiser will keep as nearly as possible directly in front, and keep in constant touch with the fishing craft in order to report by wireless as to the volume of the catches from day to day.

NOVA SCOTIA ITEMS.

From the opening of the lobster season until March 20th, weather conditions along the southwestern shore of Nova Scotia were very bad, and up to that date no lobsters were caught and the canneries had not conducted any operations. Fully 75 per cent of the gear was damaged and had to be landed for repairs.

The following week, however, conditions improved, and the fishermen were out to the grounds every day. Many lobster traps were set out at the first of the week, and good catches were reported. Prices range from 30c to 45c per pound for large, and 15c for small ones under nine inches. Some packers have sold their lobsters in shell to be consumed in Canada, instead of packing them.

Two new canneries are being built, one by L. W. Hersey, Yarmouth, and the other by Shand and Hopkins, Limited, Dog Island, to replace their old ones.

The schooner "W. G. Robertson" of Lunenburg, has been transferred to Yarmouth to be engaged in fishing out of that port this season.

BRING THE LADIES ALONG! VANCOUVER FRIENDS WILL GIVE THEM AN ENJOYABLE TIME.



Requirements for Imported Fish in Cuba

Trade Commissioner, HUGH A. CHISHOLM



Havana, February 26, 1920.—One of the most important items in the diet of the Cuban is fish. In fact, it is safe to say that the average Cuban eats fish in some form at least once a day, whether he takes his meals at home or in a cafe. The statistics tabulated below show that during the six months ending December, 1918, fish products to a value of over \$3,000,000 were imported for the consumption of a population of about 2,700,000.

The fish first in importance in the diet of the Cuban population is bacalao (i.e., dried and cured codfish). For several years Cuba has been importing the greater bulk of her supplies from Canada, and Canadian exporters of codfish have built up a permanent and valuable trade with this prosperous little republic where "sugar is king," the value of this season's sugar crop being estimated at over a billion dollars.

The following information on the requirements of the Cuban market for cured, dried and canned fish has been elicited from experienced importers on the island.

Cured and Dried Codfish

Nova Scotian codfish at present dominates the Cuban market with American imports next in importance. Small lots, however, are arriving from Norway and are finding favor with importers on account of the excellent manner in which the Norwegian fish is cured and packed. I am told that on the whole the Norwegian article is harder and whiter and keeps better in this subtropical country than the Nova Scotian cod, but that its present high price has discouraged importation on any large scale. Trial orders have recently been taken for shipment of cod from Japanese exporters, whose prices are lower than the Canadian, while their product is at least equal in quality. By the time a regular steamship service is established between Japanese ports and Havana, Japan will bid fair to become a serious competitor in the bacalao market of Cuba.

Codfish for this market must be hard-cured in the sun, so thoroughly, that, within the maximum time limit of from six to eight months required for the product to reach the consumer, there will be no danger of loss from heat or damp. It seems that the Norwegian variety stands up well under this test, but that in not a few instances there have been losses in Canadian shipments due to the fish being kept too long in warm, damp holds, especially during the recent strike of the longshoremen of Havana harbour, when ships of the Canadian Government Merchant Marine were compelled to wait for weeks in the harbour before their cargoes could be removed.

Hard-cured codfish should be packed in strong wooden boxes with iron hoops, of 100 pounds gross weight.

Hake and Tunny

The last item of the statistics tabulated below shows that other preserved fish were imported in the six months ending December, 1918, to the value of over \$300,000. This would normally consist for the most part of tunny, hake, and haddock, dried and canned.

When the price of codfish is extremely high a good market develops for haddock and hake, i.e. when the price of codfish goes, say, to \$17 per box of 100 pounds c.i.f. In Havana, many merchants buy large quantities of haddock and hake, provided the price is around \$10 to \$12 c.i.f. Havana.

Dried hake is also sometimes sold in bales of 100 pounds, but when this is done it must be sold at reduced prices as compared with the same packed in boxes.

Hake or tunny may be preserved and canned in flat tins, round or squared, of 1 pound gross weight. It is necessary, I am told, that such fish be fried in oil before canning rather than prepared by steaming. The steam method of preservation will not answer the requirements of a hot climate, and consumers in Cuba much prefer the oil-fried variety. They may also be prepared with tomatoes or pickles.

A leading fish importer said: "Codfish may also be prepared and canned in a similar manner to hake, but the label must read merluza (hake) and not bacalao, the reason being that canned codfish is not known in Cuba, whereas the canned hake is a well-known article of food, and it is considered that the difference in taste would not be noticed. In fact any fish similar in taste and texture to hake, such as haddock, could easily be prepared and canned in 1-pound tins and put on the market as merluza."

Sardines

Before the war Cuba imported most of her sardines from Spain in quantities running into the value of several hundred thousand dollars annually. During the war, however, importations of Spanish sardines dropped off to nearly zero, while Californian sardines entered the Cuban market in large quantities. The popular Spanish sardines came in 3½-ounce tins prepared in olive oil and with tomato sauce. The American variety, however, came largely in 15-ounce tins, and in many cases the consumer found, I am told, that he was buying not sardines but herring and several other varieties of fish which offended his highly developed sardine taste. Many of these varieties were prepared with cotton seed and mustard oil which the Cuban does not like. The consumer here was forced to buy the American variety on account of the scarcity of the Spanish sardines, but he insisted on a considerable reduction in price when he found it was not the article he had been accustomed to buy. Now that

importations of Spanish sardines have been resumed the consumption of the American variety has fallen away.

Herring

A comparatively small quantity of dried red herring is imported into Cuba. These are imported in small wooden boxes containing 100 to 150 fish, according to size. They may be imported only during the winter as the high summer temperature in Cuba would cause decomposition.

A market for small herrings could be found by preparing them in tomatoes and putting them up in flat tins, squared or rounded. Such herrings should not, however, be smoked for this market, as some packers are in the habit of doing.

Salmon

The market for canned salmon is largely among the English-speaking population of the island, so there need be no change in existing methods of canning. The import statistics show no salmon entering Cuba direct from Canada. This should be remedied by Canadian canners having direct representation in Cuba.

Methods of Marketing Canned Fish in Cuba

The first consideration of the Canadian canner in introducing goods into this country should be the establishment of his brand. Once a brand is established, and provided the quality is kept up, new brands, even at lower prices, would have a very difficult time getting in. Once the pioneer work is done, a brand of good quality will always sell itself even at increased prices. The Canadian canner therefore who seeks a market here must be prepared to facilitate in every way and contribute to the introduction of his brand. There are several reputable commission wholesale houses in Havana with whom the Canadian exporter could advantageously take up the introduction of his products. The months for soliciting orders are August and September, for shipping during the winter from October to April. Shipments during the summer months are dangerous for dried or cured fish.

Canadian exporters must be prepared to quote prices c.i.f. Havana and give sixty to ninety days credit. Nearly all Cuban importers get credit from their foreign shippers, and if Canadian exporters expect to do business in a serious way with this country they must also give credit.

IMPORTS OF FISH INTO CUBA

	Second Six Months, 1917		Second Six Months, 1918	
	Quantity	Value	Quantity	Value
Dried Codfish—				
United States lb.	3,509,090	\$442,323	lb. 6,375,717	\$1,026,865
Canada „	8,082,857	903,857	9,064,786	1,256,459
United Kingdom „	48,906	4,833	70,469	18,096
Japan . . . . . „	.....	.....	16,841	5,077
Herrings—				
United States „	254,449	14,776	201,420	18,543
Canada „	95,636	5,658	227,683	23,190
Spain „	82,173	5,700	6,091	702
Salmon in Tins—				
United States kg.	452,796	101,622	kg. 37,099	12,242
Preserved Sardines—				
United States „	236,506	69,639	1,237,834	359,059
Spain „	94,215	21,865	6,400	1,640
Other Preserved Fish—				
United States „	582,857	144,466	368,524	121,683
Spain „	1,049,517	226,691	386,632	205,007

NEW BRUNSWICK FISHERIES.

(Special Correspondence.)

The Department of Fisheries has issued an order, providing that in issuing licences for unused weir-sites preference shall be given to the application of ex-service men. In St. John and Charlotte Counties, N.B., the Department has usually issued licences at a cost of \$5.00 for about 120 sites, upon which no weirs have been erected. In the past weir owners usually took out licences for neighboring sites in order to restrict the competition. But now the ex-service men will have first choice of the unoccupied sites, and furthermore if any site is not utilized by Aug. 31st, its licence will be cancelled, and it will be offered to anybody prepared to erect a weir. This regulation has not found much favor with the old weir owners.

Weir owners in the Bay of Fundy District are now putting their weirs in shape for the summer fishing. Little information has been made public as to the plans of the Maine packers but they have disposed of most of their stocks, and an active season is anticipat-

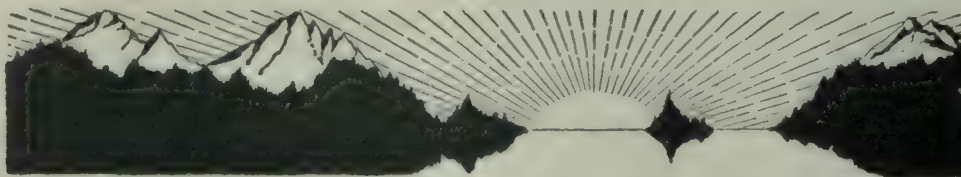
ed. Connors Bros. of Black's Harbor, N. B. hope to operate at full capacity, but they are having difficulty arranging for supplies of tins and oils. They already have orders from Brazil, Argentine and Australia, which will take care of half their anticipated packs this year, and the reputation of their pack is such that the selling side of the business does not worry them.

Grand Manan and North Shore Fisheries are making ready for the smoked herring industry. Prohibition in U. S. has had some effect on this trade, as smoked herring were largely used on the lunch counters of saloons. But operations will be on the usual scale, and it is expected a satisfactory market will be available.

YOU HAVE WORRIED AND STRUGGLED
THROUGHOUT THE WAR. YOU OWE YOUR-
SELF A HOLIDAY. GET OUT TO VANCOUVER
AND FORGET THAT SUCH A WORD AS
"WORRY" EVER EXISTED.



The 1920 Convention Province



British Columbia in the Making

By B. A. McKELVIE

(in Industrial Canada).

According to a local legend, two angels were sent to seek the most favored portion of the earth as the future home of a worthy nation, and to endow it with the richest gifts from Nature's store-house. They selected the northern half of this continent, and lavishly bestowed on it the wealth of minerals, forests and waters which they had brought. When the work had been done, the angels paused and surveyed it. One was satisfied, but the other exclaimed: "We have distributed our treasures with an indiscriminate hand, but have left no place for the husbandmen of a mighty race." So they returned to their labor and swept the riches westward, piling up treasure-bearing hills and creating fertile valleys in order to leave in the centre of the domain a rolling plain for the plough of the tiller.

Discovery of the Province.

This, then, is perhaps the reason that British Columbia has such a wonderful proportion of Canada's natural resources; why its great wooded mountain ranges, bursting with gold, silver and baser metals extend from the prairies to the sea, forming thousands of land locked harbors and winding inlets teeming with fish, while its countless valleys are productive of the best to be found in the realm of agriculture.

It was fitting that the discovery of this Province should have been made by men who were seeking the Eldorado of tradition. That they found it is the belief of those who have the "open sesame" to the rock-ribbed chambers of wealth in this western land. The magic words of success are, they say, "faith and work."

Tradition says that Juan de Fuca was the first to visit this part of the Pacific Coast. The date of his journey is given as 1592, but reliable information respecting it is not available. His name was given by a later explorer to the straits separating Vancouver Island from what is now the State of Washington. No actual record is obtainable before the year 1775 when the Bodega and Hecate visited the locality.

British Columbians really date the history of their province from the arrival of Captain James Cook in 1778 on his third voyage of discovery. He had been commissioned by the British Government to explore north of the 45th degree in the hope that a passage might be discovered from the Pacific to the Atlantic. In this, of course, he failed, but he gathered valuable data respecting the coast, and chartered the name such places as Nootka Sound, Prince William's Sound, and Cook's Inlet.

Chelikoff, a Russian, was the next explorer of note to arrive. He examined the country from the south-

west extremity of Alaska to Prince William's Sound. This was in 1783, the same year that the North-West Fur Trading Company was formed in Montreal to carry on business in the western wilds.

Other seamen and traders followed, and in 1787 Captain Barkley records the discovery of the Straits of Juan de Fuca, which he named after the Spanish navigator of two centuries before. The following year Captain Meares started shipbuilding on this coast when he launched the "North-West Coast" at Nootka. In 1789 a dispute arose between the British and Spaniards over the trading rights to the country. The Spaniards seized the British post and ships. The "Nootka affair" was the result. For a time it looked as if war might eventuate, but the settlement of the difficulty, October 28, 1790, put an end to such fears.

Arrival of Capt. Vancouver.

It was to settle the claims arising out of the "Nootka affair" that Captain George Vancouver was sent out by the British Government as commissioner. Having accomplished his mission he continued on the coast exploring the uncharted waters, and to him belongs the credit for first circumnavigating the great island which now bears his name.

The years which followed are replete with tales of wild adventure and daring exploits on the part of the intrepid traders who ventured into the country in search of wealth.

The first journey overland from Eastern Canada was made by Sir Alexander McKenzie, who reached tide water near Bella Coola, in 1793. Fifteen years later Simon Fraser explored the river, named in his honor, reaching the Gulf of Georgia along its banks.

The boundary between Alaska and the British territory was fixed by a treaty between Great Britain and Russia in 1825. The same year Fort Vancouver now in the State of Washington, was located.

The Hudson's Bay Company, the trading organization which had so much to do with the development of Canada since its incorporation in 1670, was given exclusive privileges in the western country in 1836. In 1842 this company selected Victoria as its headquarters on the coast, and the next year erected a fort and stockade.

Settlement was fairly rapid about Victoria, with the result that in 1849 Vancouver Island assumed the status of a crown colony. Fort Nanaimo was founded in 1852, following the discovery of coal at that place two years before. The old blockhouse is still standing in an excellent state of preservation, in the business section of the city. The stockade, however, dis-

appeared many years ago with the growth of the town.

The first elections on Vancouver Island were held on August 4, 1856, and eight days later the first Legislative Assembly convened at Victoria.

Gold was discovered on the Fraser and creeks of the Cariboo district in 1856. Two years later there was a rush of gold seekers to the vicinity, and thus started the first real settlement of the country. A few of these pioneers who came in the first stampede are still alive to tell of those adventurous days.

It was in 1858 that the mainland of British Columbia became a Crown Colony, and its boundaries were defined. The capital of the new colony was located on the banks of the Fraser River. It was to have been called Queensborough, but Her Majesty, Queen Victoria, who was asked to name it, expressed her desire to have it known as New Westminster. The first session of the Legislative Assembly met at New Westminster January 21, 1864. Vancouver Island and the mainland united as British Columbia in 1866, the first Parliament meeting at Victoria in 1868. Two years later the province entered Confederation.

November 6, 1885, saw the connecting by steel of British Columbia and the Eastern Provinces, when Sir Donald Smith, later Lord Strathcona, drove the last spike on the line of the Canadian Pacific Railway. The terminus of the line was to have been Port Moody at the head of Burrard Inlet, but later it was moved fourteen miles nearer the mouth of the inlet to the small settlement of Vancouver. The City of Vancouver was incorporated in 1886, and was destroyed by fire the same year.

Such, in brief, has been the story of Canada's Pacific province. In the thirty-five years which have elapsed since the first locomotive brought through communication from the East, the development has in many ways been phenomenal, and as yet its natural resources are to a great extent unknown and practically untouched.

The discovery of gold in the Klondike in 1896-7 gave the trade of the province considerable impetus, and laid the foundations for many of the manufacturing plants of today. Full advantage was not taken at the time of the opportunities offered by the northern gold fields. The result was that the Port of Seattle gained a lead over Vancouver, which the Canadian city has not yet overcome.

The industrial development of British Columbia in the days before the war was greatly retarded by local conditions. Transportation problems, high wages, and production costs and lack of markets. Like every newly opened western region of great potentialities, the province suffered from the activities of the "wild-catter" and his fellows, the "boomster" and "land speculator."

From the trial and sobering influences of war, British Columbia has emerged keen, alert and sensible to the necessity for business on business lines. Land values have been reduced, and are more in keeping with their real worth. The "wild-catter," "boomster" and "speculator" have departed, and in their place are to be found men ready to discuss expansion and development along sane and reasonably safe commercial lines.

No longer is the province served by one railway. Three transcontinental lines traverse the mountain passes of the Rockies, opening up rich areas for settlement. Two of these are under the control of the

Dominion Government, while the Provincial Government railroad is being completed this year diagonally across the province. The settlement of the coast district with its 27,000 miles of tidal shore line, is resulting in new and more frequent marine communication. The water-borne commerce of the world is increasing to and from Canada's Pacific ports, demanding the construction of great concrete piers, wharves, warehouses, dry-docks, etc.

The greater equalization of living conditions between the western province and the older portions of Canada with the consequent levelling of wages paid in industry, the utilization of by-products, and the introduction of improved machinery and business methods have reduced the margin between production costs of the East and West. Thus British Columbia manufacturers have better opportunities in the competitive markets of the Dominion.

DIESEL ELECTRIC TRAWLER.

The Mariner, a trawler now building for the Marine Trawling Company of Massachusetts, is to be the first privately-owned vessel fitted with Diesel electric propulsion machinery. This method of propulsion has many advantages as shown in the following description of the vessel:

The craft is built of very best selected oak, hard pine and Douglas fir, and put together by the skilled workmen of Essex. Length over all 150 feet, beam 24 feet 6 inches, draft 15 feet.

The machinery will be built and installed by the New London Ship and Engine Company and the General Electric Company, who are sparing no expense to make this the latest and best thing in Diesel-engined and electrically-operated-vessels in the country. The reputation of these concerns is sufficient to guarantee success.

Installation will consist of two eight-cylinder Diesel engines, direct-connected to electric generators which produce power to drive an electric motor direct-connected on the propeller shaft. This electric power will, at the same time, operate the deck winch to raise the trawl and also drive deck winches, furnish lighting for ship, etc.

The benefits and economy of electricity are many. Take, for example, the flexibility of control of ship. The entire control of the ship is from the bridge by the captain, thus preventing misunderstanding of signals between captain and engineer, as the captain by a short lever can stop, start, reverse, go fast or slow, and reverse propeller from full speed ahead to astern in the short time of five seconds.

Another benefit is that when the ship rides a sea there is no racing of the propeller as on a steam-driven ship.

An important economy in an electrically-driven ship is the great saving in hold or cargo space and in weights of machinery and fuel. In a ship the size of the Mariner, if fitted with steam engines, the weight would be 115 tons, as against a weight of 56 tons when electrically driven. The weight of fuel and water for a cruising radius of 5,000 knots would be 398 tons for a steamship, against 46 tons for the Mariner. This gives an electrically-driven ship a greater carrying capacity with a smaller hull than with steam, and the original cost will be in proportion of 7 to 9 in favor of electricity and oil.—Pacific Marine Review.

FRENCH FISHING SCHEMES RETARDED.

Ambitious Projects in Danger of Falling Through.

(By COLIN McKAY.)

France's great plan for the development of her fisheries have, like those of Germany, failed of realization so far. Germany made ambitious plans during the war; her authorities calculated on being able to use the bulk of the British and French fishing fleets, and their schemes provided mainly for the enlargement of the equipment of fishing ports. After the armistice France envisaged great plans for the development of her fishing fleet, her fishing ports, her cold storage, depots and refrigerator train service, evidently counting on being able to dispose of large indemnities from Germany. At its last session the Chamber of Deputies adopted a project of law, providing for expenditure of 200 million francs (\$40,000,000 at normal exchange) on her fishing fleets, ports and refrigerator facilities. The Marine Committee of the Senate reported favorably on the project, though suggesting that until the French railway systems were improved transport difficulties would largely discount the anticipated benefits from the development of the fisheries. The Finance Committee of the Senate, however, failed to report the project, and the Senate adjourned without taking action on it. According to a recent number of *Le Journal de la Marine Marchande*, the Department of Merchant Marine was responsible for the delay, the reason being that the needs of the Merchant Marine are more imperative. But *La Pêche Maritime* is of opinion that the true reason of the dilatory maneuvers was the anxiety of the Finance Committee of the Senate regarding the general financial situation, and its indisposition to authorize new expenditures, in view, evidently, of the doubts as to any substantial indemnities being forth-coming from Germany in the immediate future.

The French Government had, however, anticipated the ratification of the 200 million project. It let contracts for the construction of a considerable number of steam trawlers, and according to Mr. Duff, M.P., for Lunenburg N.S., ordered a number of fishing schooners from Nova Scotia builders. It also authorized the inauguration of important improved projects at Boulogne, Rochelle, on the Lorient, and other fishing ports. Now *La Pêche Maritime* says many trawlers constructed by the State are lying idle in French ports because no provision has been made for loans to enable the fishing interests to buy them, and that 15,000 fishermen are unemployed. Moreover it is feared the Government will be obliged to abandon its programme of port development, and the construction of cold storage depots and three types of refrigerator cars especially designed for the transport of fish.

Meantime Senator Farjon of Pas-de-Calais has issued a call to all the coast representatives of France to join in a movement to induce the Government to proceed with its plans, trusting to favorable action on the part of the Senate; and M. Millies-Lacroix, president of the Senate Finance Commission, defends the delay in the ground that the Senate was absorbed in treason trials and did not have sufficient time to give the project thorough consideration.

WHERE ARE WE GOING IN JUNE? TO VANCOUVER, OF COURSE, WITH THE REST OF THE GANG!

ANDREW HALKETT'S LECTURES TO LOBSTER FISHERMEN.

Andrew H. Halkett, naturalist of the Fisheries Branch of the Department of Naval Service, Ottawa, has accomplished splendid work in Nova Scotia, where during the last few weeks he has been addressing audiences on the natural history of the lobster and its conservation.

He spoke before thirty different audiences in the counties of Halifax, Lunenburg, Queens, Shelburne, Yarmouth, and Digby, his hearers totalling nearly 2,500. Of these, fully 1,200 were directly interested fishermen, and among the balance were men of prominence and intelligence; so that behind him Mr. Halkett leaves disciples who will carry his important message to those whom he was unable to reach directly.

Beginning at Chester, Mr. Halkett went to Hubbards, Mill Cove, Indian Point, Blue Rocks, Rose Bay, Point Medway, Point Mouton, (twice) Liverpool, Beach Meadows, Lockport, Sandy Point, Gunning Cove, Clarke's Harbour, Stoney Island, Port Latour, Wood's Harbour, Shag Harbour, Middle West Pubnico, Port Maitland, Cape St. Marys, Meteghan, Sandy Cove, Tiverton, Freeport, Westport, Little River, and later he addressed the staff of the office of Mr. Ward Fisher, Chief Superintendent of Fisheries at Halifax.

Mr. Halkett's address was particularly interesting. After a few introductory remarks dealing in a general way with the lobster industry, he exhibited a series of twenty-eight lantern slides dealing with the natural history of the lobster during the whole course of its life, demonstrating the internal and external anatomy of the species. These slides were fully explained. Afterwards there was a period of open discussion, during which some very pertinent questions were put. This portion of the meeting often developed into the most interesting and most profitable part.

Although the work of Mr. Halkett during this tour and subsequent tours has not yet succeeded in bringing all the fishermen to realize the folly of taking undersized lobsters or in any way interfering with the natural multiplication of the species, many have been converted. Those fishermen who were fortunate enough to hear Mr. Halkett readily realized the injury they were doing themselves, and that instead of a profit they were really a menace to the industry.

PISCATORIAL PARAGRAPHS.

Are you going to the Vancouver Fisheries Convention?

The Pickled Fish Inspection Act is up again in the House of Commons. Here's hoping that it will be passed for the good of the Industry.

The low values of European currency will militate against the marketing of the Canadian canned lobster pack this season.

Arrangements are being made by the Publicity Division of the Federal Fisheries Department to show the members of the Imperial Press Conference something of our fishing industry. The Conference will arrive in July and it is proposed to take them to one or two Maritime Province fishing ports and later on to have them view the industry on the Pacific Coast.



Caviar: What It Is and How to Prepare It*

By LEWIS RADCLIFF,

Scientific assistant, United States Bureau of Fisheries



Caviar, in the strictest sense of the work, is the roe of the species of sturgeons (*Acipenseridae*) prepared in the various grades as an article of food. This restricted use of the term is explained in that the eggs first prepared and most extensively used were those of the sturgeon, and to many persons the term is synonymous with "sturgeon caviar." Of species which do not belong to the sturgeon family, the spoonbill cat, or paddlefish, yields the highest grade of caviar. In the Mississippi Valley this product ranks next in value to that of the lake, or rock, sturgeon, the most valued of the sturgeons in United States waters. Caviar is also made from the roe of the salmon, whitefish, lake herring, carp, and other species, as will be discussed on a later page. When such caviar is marketed, the label should indicate the name of the species from which the roe was derived, thus: "Spoonbill caviar," "Whitefish caviar," "Carp caviar," etc.

Failure to protect the adult sturgeon and the wanton destruction of the young has nearly destroyed the sturgeon-fishing industry. The expert caviar maker of former years has disappeared and now every fisherman fortunate enough to capture a "cow" sturgeon endeavors to make caviar, but through ignorance of the process his good efforts are usually in vain. It is hoped that this little paper will assist him in making better caviar, and enlist his co-operation in upbuilding the industry to the extent of using his influence for better laws and their enforcement and for the prevention of the killing of the young.

Equipment.—The equipment required in the manufacture of caviar is simple and inexpensive, consisting of the following articles:

1. A large wire sieve, with meshes large enough to permit the free passage of the eggs through them. A sieve 18 inches in diameter, with wire meshes one-fourth of an inch apart—that is, four meshes to the inch—will prove satisfactory.

2. A number of fine-meshed wire sieves large enough to hold about 10 pounds of caviar. The meshes of these sieves should be about the size ordinarily used in flour sifters. A convenient size is one about 14 inches in diameter with 16 to 20 meshes to the inch.

3. A wooden tub in which to mix eggs and salt.

4. Shipping containers: Half barrels, small wooden tubs, clean butter firkins, and tin pails.

5. A quantity of German Luneburg salt, or American or English dairy salt. Owing to the unusual conditions abroad, the supply of Luneburg salt in this

country is now (January, 1916) practically exhausted.

How to make Caviar.—The main steps are outlined below, followed by a more detailed description of the process.

1. All utensils should be thoroughly clean.
2. Bleed the live fish and remove the roe at once.
3. Place the roe on the coarse sieve over the wooden mixing tub and gently rub the roe, freeing the eggs and allowing them to drop through the meshes of the sieve into the tub.
4. Add 1 pound of Luneburg salt or one-half pound of American dairy salt to every 12 pounds of roe in the tub.
5. Using both hands, thoroughly mix the eggs and salt for five to eight minutes, until a foam or slime forms on the top of the egg mass.
6. Allow the egg mass to stand for 10 minutes and then mix again for a few minutes. By this time a copious brine should have been formed so that the eggs will pour readily.
7. Pour the eggs into the small sieve, 8 to 10 pounds to a sieve, and drain for at least one hour or until the brine is entirely drained off.
8. Pack in tubs or other containers for shipment. Containers should be as nearly air-tight as possible.
9. Do not mix eggs from different fish, but pack each in a separate containers if possible.
10. If the product is not shipped at once it should be kept in a cool, but not freezing, temperature. After the egg mass settles, the containers may be refilled before they are headed up.

As soon as captured, the "cow" sturgeon should be taken ashore and bled, the simplest method for bleeding the fish being to cut off the tail. All utensils to be used in the preparation of caviar should be thoroughly cleaned. Remove the roe at once, keeping it from contact with fresh water, which tends to soften and break the shells, and do not expose the eggs to the direct sunlight. Do not use the roe of fish that have been dead for some time, nor that of "runners"—ripe fish.

Place the roe on the coarse sieve over the large wooden mixing tub. Using the full palm of the hand, the operator rubs portions of the roe on the sieve, separating the eggs from the tissues which bind them together and permitting them to pass separately through the meshes of the sieve into the tub below. The operator should avoid rubbing the egg mass hard enough to force pieces of the tissue and other foreign matter through the meshes into the mass of eggs collecting in the tub. Any foreign matter which escapes into the tub should be picked out as the eggs are mixed.

* U. S. Bureau of Fisheries Bulletin.

When the rubbing has been completed there will still be a few eggs adhering to the bottom of the sieve. These may be scraped off with the fingers and all other matter discarded. This discard is sometimes used for fish bait. Operators who prepare large amounts of caviar will find it convenient to fit the coarse sieve over the zinc-lined trough and rub the eggs into it. One type formerly used was 18 inches deep and two feet wide by 4 feet long. The bottom was sloping and had an opening at the lower end, closed with a sliding door underneath, the eggs being drawn off through the opening into the mixing tub.

The eggs which look like small shot, are now ready for salting and mixing. Using one of the small sieves, sift the salt, which should be dry and free from lumps; into the egg mass, in the proportion of about 1 pound of Lunenburg salt, or one-half pound of American or English dairy salt to 12 pounds of roe. While these proportions will give satisfactory results if the caviar is properly handled, the instructions of the various canners differ slightly as to the amount of salt required. The amount advocated by most of them ranges from 5 to 10 pounds of Lunenburg salt for each 100 pounds of roe, and one canner, at least, recommends the use of 12 or 13 pounds of this salt to 100 pounds of roe. To those using the dairy salt, one advises the use of only 4 pounds of salt to 100 pounds of roe, stating that more than this will impart a woody taste to the caviar; another advises the use of the same amount of dairy salt as of the Lunenburg salt. In such instances the fishermen are advised to follow the instructions of the canner to whom the caviar is shipped.

As soon as the required amount of salt has been weighed out and added, the mass should be thoroughly mixed. Use both hands for this and mix carefully, avoiding unnecessary breakage of eggs. At first the egg mass will be sticky, but the strong affinity of the salt for the watery constituents of the eggs causes it to abstract this water, forming a brine. The mixing should be continued for five to eight minutes, until a foam or slime gathers on top of the egg mass. Allow the eggs to stand for 10 minutes and then mix again for a few minutes. By this time a brine will have formed and the eggs are ready to be poured. If the operation has been properly carried out, a slight noise, like small pieces of glass rubbing against one another, is perceptible when the mass is stirred. Now pour the eggs into the small sieves, 8 to 10 pounds to a sieve, and drain for about an hour. Some dealers complain of receiving improperly drained "soupy" caviar. When such caviar is received, it has to be drained again and the fisherman is paid for the balance. This often leads to misunderstandings which the fisherman can avoid by properly draining until the mass will crack open if the bottom of the sieve is pushed up at any point. Some operators place the sieves on sloping planks with a strip nailed along each side to facilitate draining. When properly drained, the caviar is ready for packing and shipping. Do not unnecessarily disturb draining eggs, and in emptying the sieves do not dip the caviar out but turn the sieve upside down over the shipping container and allow the contents of the sieve to fall out in mass. If possible, prepare light and dark varieties of roe separately, as the mixing of the two gives the product a speckled appearance, which is less valuable than caviar of uniform color. Do not under any conditions use "preservative" or other preservative. Shipping

containers should, if possible, be completely filled and should be as nearly air-tight as possible. After the process has been completed, all utensils should be thoroughly cleaned and stored where they will not corrode.

The impression of some fishermen that the more salts added the heavier will be the caviar is wrong. The addition of salt extracts the water from the eggs and reduces their weight. For the caviar to retain its delicious flavor, the roe must be mildly cured. If an excess of salt has been used, the caviar on being treated by the canner will taste so strongly of salt as to be practically unsalable. The only changes in the amount of salt depend upon temperature conditions. In cold weather as little as 1 pound of the Lunenburg salt or one-half pound of the dairy salt to 18 pounds of roe may be sufficient, but in very warm weather as high as 1 pound of Lunenburg salt or one-half pound of the dairy salt to 9 pounds of roe may be required. If the roe is too ripe and the entire egg mass is soft and tender to the touch, it may be put into a strong brine until it is thoroughly "struck" with salt. This, however, makes an inferior grade of caviar. The roe properly prepared is the finished product—caviar—and receives no further treatment except to put it through pasteurization process when it is canned, so that it will keep. It is then packed in earthen or glass jars or in especially prepared tin cans which will withstand the corrosive action of the salt.

NOTES ON SEA FISHING RESULTS FOR FEBRUARY

Stormy weather prevailed on the Atlantic Coast during the greater part of the month. In fact, one Officer on the Western part of Nova Scotia reported that only two days were fit for fishing, yet the aggregate catch of cod, haddock, hake and pollock is about equal to that of February last year when fine weather conditions ruled.

The quantity of smelts taken from the 1st to the 15th of the month when the season for net fishing closed, was 12,559 cwts, against 8,812 cwts, for the same period last year. The lobster fishery opened in the Counties of Charlotte and St. John, N. B. on the 15th November last, and in the other Bay of Fundy Counties of Albert, N. B. to Annapolis, N. B. on the 15th of January. The quantity landed up to the end of February was 5,842 cwts, against 3,506 for the same period last year.

Weather conditions were favorable for fishing on the Pacific Coast and results were satisfactory. The herring catch in the Vancouver Islands District amounted to 219,780 cwts. against 173,894 cwts. for February last year. The bulk of the catch was dry salted for the Orient. American and Canadian vessels landed 12,335 cwts. of halibut against 9,769 cwts. for the same month last year.

Total value of seafood at the point of landing on both coasts was \$649,108. For the same month last year the value amounted to \$597,236; being an increase of \$51,872. One fisherman belonging to Charlotte County, N. B. was drowned in the course of the month.

DON'T FORGET TO BRING THE WIFE ALONG.



MONTREAL FISH FACTS AND FANCIES

By THE DREAMER

*" 'Tis an honest trade;
'Twas the apostle's own calling."*

Montreal, April 17.—The lenten season is over and business is good, is the report all over the city. Dealers are now preparing for fresh caught stock and prospects are good from the source of supply.

Two retail fish dealers in the city will be obliged to discontinue business on May 1st owing to the fact that their stores have been rented over their heads and they are unable to find other locations.

This may seem very strange to the reader. Just imagine in a great city like Montreal being unable to secure a store to sell fish in? Of course there are stores and stores, but these fish men are proud of their wares and desire a good location to sell a good article.

Could we call a proprietor of a vacant store a loyal Canadian who, at the very outset, when he enquires what you want the store for and you mention fish, he acts as though he was doing a "Shimmy" and, absolutely refuses point blank to allow his property to be contaminated with such a horrible, degrading, article?

These proprietors have a vision of a fish store that is a "Smelly Filthy Place." The writer knows every fish market in this city and without fear or favor can say that Montreal Boasts of Fish Dealers, who know that a filthy store and lack of Pride in the business is a short road to failure.

We have a crowd of successful dealers who are proud of the calling and handle their business with precision, keep clean stores, well kept displays give prompt, up to the minute service, neat packages, and are well worthy of national support.

All this (and a whole lot more could be added to it) only faces us with the fact again that there are thousands today uneducated about the real importance of our calling.

A cartoon appeared in the current issue of the N. Y. Fisheries Gazette, showing a bit of the ocean with a Fishing Trawler called the "Fishing Industry" plunging her way through the sea steering clear of a lot of rocks which are labelled "Dull Business" "Slow

Sales", "Stagnation", etc., etc., etc., the channel the ship is making for is marked "Prosperity". Her reaching the desired safe channel depends wholly upon her trustworthy pilot who is labelled "Advertising and Publicity Work" the title of the cartoon is "The only pilot to steer the ship through the rocks to prosperity."

Each and every steer of Advertising or Publicity we can give to the trade is a step in the right direction. If we can only get on common ground and shoulder this pioneer work altogether, obstacles such as have been reported here will cease to exist.

Do the clerks in your store like Fish? If he eats, and enjoys fish he can convince the customer that it is good. Perhaps you have never suggested to him to have a feed of it often. Make him a Booster this way. Give him his fish at cost. He is often asked if such a fish is nice. How can he answer it?

It is hard for the small dealer to spend large sums of money in publicity work. But he can use other means. For instance, the Bare walls in his store and the Front can be used to tell a story to the Passer-by and the Customer.—"How to Build up the Country," "Develop Brains," "Beat old Hi Cost," etc., etc. Attractive and neat title Posters from the sign writer only cost a few cents each and earn dollars for the enterprising dealer.

A Fish dealers Club is not an impossibility. If this catches the eye of one who would like to Bequeath some of his gain in a great work, give an institution like this a start.

Some place where the Little and Big Fish heads can go any evening and talk shop. The upkeep of this would be simple, were it given sufficient help to start it.

Were we only to realize the REAL National importance to our Country of our Trade, and have faith in it, what a field of opportunity we have ahead, and what a lot we are missing. The so called slavery of it would be a "picnic" and the end would be invisible.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building., Vancouver, B.C., Canada.



"SEE YOU IN VANCOUVER"

Vancouver is Getting Ready for You.



By the time you read this, the mail will be bringing you all kinds of invitations and descriptive matter telling just how much you are going to miss if you do not come to Vancouver to the CANADIAN FISHERIES CONVENTION, June 3, 4 and 5.

Every man in the fish business in British Columbia is planning to close up his desk, and show the people from other parts of the country just what kind of a place this is out here.

Everything is ready except the arranging of the many small details. It is impossible to give the names of the different committees at this time, but we can say that they will be a live efficient lot of executives. When Al. Hager takes hold of anything you may be sure that something is doing. Our new chairman of the Vancouver Branch, Mr. F. E. Burke is right on the job, and he is thinking up all kinds of things to make life interesting to every one at the convention. Any of you fellows back East that know Jim Eckman can just about imagine what he is doing now. Speaking of making life interesting, this man certainly is making life interesting for everyone connected with the convention; he is sure one "Johnny go get 'em". There isn't a loose dollar anywhere around town but what he has got his eye on it, and that means we have got the stuff that greases the ways. Then there is McLean (Mac), and Henry Doyle, and Frank Milnerd. These men are some of the live Cannery men that are helping out on the job. Then there is George Buttmer, and Oh! say! if none of you fellows have ever met Charley Julian, you know all about it, but if not, be sure and meet him. He will be on the job. (By the way he has been to China). Mr. Sterret will be up from California to see his old friends, and Bob Payne has his foot on the accelerator.

Just bear this in mind, The Vancouver Branch is the largest branch of the CANADIAN FISHERIES ASSOCIATION, and we are making plans that will

make this the most successful Fisheries convention, ever held on the continent. A great deal of the success will depend upon the attendance. This is up to the out of town members. We want you here. Make your plans, and bring your families along.

One important committee is the LADIES committee, and this is being selected with great care. Plans are being made that will take care of the entertainment of every lady in the party. Shopping, teas, golf, tennis, swimming, sight-seeing, auto rides, and anything that the visiting ladies will wish to make there stay enjoyable.

Fred Wallace, the National Secretary is planning to be in Vancouver a week ahead of the first delegates, and we would like to have every one that plans to attend the convention advise him as early as possible, and also let us know as soon as possible just what day and train you expect to arrive on. The reception committee plans to meet every train and boat, and there will be autos in waiting to take you and your party to your hotel. Another matter that is important in this connection is that by letting us know when you are coming as far ahead as possible will enable us to have your hotel reservations arranged for, and as we know just what day you will arrive, we will have your room all ready for you. Vancouver is going to be a great convention city this Summer, and this is the first one in June so that it is essential, to secure hotel reservations, that you advise us as early as possible when you expect to arrive in Vancouver.

To give an idea of the interest that is being taken by those connected with the fishing industry we know of a man who handles canned salmon, and this party is making a trip all through the East and the U. S., and is extending a personal invitation to handlers of canned fish wherever he goes to attend the convention. Many of the big Eastern houses handling canned fish have never been to the Pacific Coast, and

have never seen a salmon cannery. These men are going to have a hearty invitation extended to them, and we hope there will be a good number of them come out.

Now then make your plans, and come on out and see our great big country, take part in our convention, and help make it the success we know it will be. You will sure be sorry you didn't come, if you don't get out here with the bunch.

THE FISHERMEN'S SIDE TO THE EMBARGO QUESTION IS NOT THE ONLY SIDE.

British Columbia Labor Loses More Than Fishermen.

Not all the figures in connection with the export of raw salmon from British Columbia have been published yet, and when they are, perhaps the men employed in other industries, which are allied to the fishing industry, and which lose out by the export of raw fish, may have something to say in regard to this important question, which has been agitating those engaged in the industry for many years. It is to be hoped that the Minister, Hon. Mr. Ballantyne, has not given any definite decision in connection with the embargo question, and will not do so until he has some definite data.

There is every reason in the world why the embargo should be put into effect for at least three years, and give the British Columbia canneries a chance to demonstrate what they can do in that time to take care of all the fish offered and at the proper prices. This is aside from the chance to conserve the fish, and this side of the question apparently is irrelevant to the fisherman as long as he gets a market for all he can sell, at prices which please him.

One point the fishermen do not bring out is the instances last season when many lots of salmon were taken to the American canneries, and then because they could not get their prices the fish were destroyed.

As Mr. A. L. Hagar told the fishermen at a recent meeting in Vancouver, if they would give the British Columbia Canner a chance to see what they could do in regard to building up a trade in the chum salmon for two or three years, he was sure they would find a market here at home for all the raw fish they could produce, and at prices that would equal if not better the prices they would get with conditions as they are now. On the other hand they would have the fish cleaned out with things going on as they are at present as they would have no fish left. If the American Canner is unable to secure the chum salmon that he takes from the British Columbia canners, he would be unable to fill orders for this variety and that would enable the British Columbia Canner to step in and get these orders, with the result that in a couple of years time the canners here would be able to take unlimited quantities of the lower grade of fish.

Aside from the furnishing of supplies such as groceries, meats, gear and other articles, which means employment for all kinds of white labor, as the results of their labor would be used if the raw salmon were not shipped out of the country. These are the Logger, the lumber mill employee, the box factory employee, the can factory employee, the nail factory employee, the printers, and others in the transportation companies. These are all made to suffer to benefit one class of those engaged in the industry. A few dollars less to one branch of the industry for the time being, when it means a saving of thousands to the entire industry, should be a strong reason for putting into effect a law that has been needed for a long time past.

NEW GENERAL MANAGER FOR B. C. PACKERS ASSOCIATION.

Mr. W. H. Barker, who has been general manager of the B. C. Packers Association, as well as president, has resigned as general manager and Mr. J. M. Whitehead has been appointed in his place. Mr. Barker still retains the presidency of the Company. This appointment was made at a meeting of the Company at the head office, and the election of directors resulted as follows: W. H. Barker, president, Aemilius Jarvis, Toronto, vice-president, Campbell Sweeney, William Braid, Robert Kelly, J. M. Whitehead, E. E. Evans, all of Vancouver; A. C. Flumerfelt, Victoria; Sir Henry Pellat, Toronto; F. W. Rollins, Boston; Mark Workman, Montreal; C. H. Smithers, Montreal. Mr. L. Doucet was re-elected secretary-treasurer.

In his annual report, Mr. Barker referred to the dividends that had been paid last year amounting to \$234,881.00, and also to the fact that in August last, the rate had been raised from 5 to 6 per cent. It was shown that the assets of the B. C. Packers was rapidly approaching \$5,000,000.00.

That the cheaper grades of salmon on hand would be disposed of at inventory prices, was the belief expressed by the president.

DEFIANCE PACKING CO. ASSETS TO BE SOLD AT AUCTION.

On the 3rd of May, 1920, the assets of the Defiance Packing Co., Ltd., will be sold at auction. The operation of the two canneries of this company by Balfour, Guthrie Co., for the creditors of the company during the 1919 season was not at all successful owing to certain conditions. The liquidator in his report believed it was for the best interests of all to dispose of the assets at the best figures obtainable. This opinion was concurred in by the creditors, and the sale will take place as above noted.

ENGINEERING DEPARTMENT OF DOMINION FISHERIES HAS BEEN BUSY DURING PAST SEASON IN BRITISH COLUMBIA.

Mr. John McHugh, resident Engineer, for the Dominion Fisheries in Vancouver made a trip to Northern B. C. during March to arrange for the construction of a float for the fishery patrol boats at Prince Rupert, and other matters concerning the coming salmon season.

Mr. McHugh reports that the Lakelse Lake Hatchery will be completed this Summer, and will hold a total of 10,000,000 eggs. Just as soon as travel permits supplies and construction material will be rushed to the site from Terrace.

Another important matter which Mr. McHugh arranged for while at Prince Rupert was for the repairing of the fish way in the Meziadin River, so the salmon could get the Meziadin Lake. This lake is at the head waters of the Naas, and is a spawning ground for the sockeye.

The party which will attend to the repairs will leave Stewart in June or early in July this season, and will complete the repairs in time for the Sockeye run. The fishway, which is referred to is constructed in a series of locks. The fish by passing from one lock to another avoid the negotiation of a considerable waterfall.

B. C. GOVERNMENT ASSISTS GAS ENGINE BUILDERS, AND BOAT BUILDERS.

The provincial department of industries have loaned Ordano Brothers, of Cowichan Bay, Vancouver Island, \$1,500.00, to assist in their boatbuilding business. These brothers recently returned from overseas, and will increase their plant. They are builders of fishing craft.

The Vivan Gas Engine Works of Vancouver secured a loan from the department amounting to \$15,000.00. This concern is turning out a heavy duty engine, which is being used extensively in the fishing business.

1920 CANNED SALMON PACK.

It is pretty early in the season (March 30th) to make any analysis of the canned salmon situation. All kinds of reports are coming from all over the world as the condition of the markets. Some reports from the U. K. are to the effect that quite a lot of the 1919 pinks are still on hand, and no definite idea as to the chances of the stocks moving before the 1920 packs would be at hand can be obtained. On the other hand one hears of the new prices talked of for 1920 sockeyes such as \$18.00 and no one at all willing to accept at this price. Without doubt the market for any variety of red meated salmon will be good, but those packers who are also in the habit of having a certain amount of pinks will naturally wish to move their lower grades of fish at the same time. For this reason until there is some certainty regarding the market for the lower grades the price of sockeyes and other red varieties will be an uncertainty.

Another factor at the present time is the question of salmon regulations for 1920. If the coast stays open as the 1920 regulations call for there will be a great uncertainty in prices to be paid for, and in the cost of production of raw stock. There is one certain fact, and that is that costs are much higher in every way than in past years, and during the past 4 or 5 years every other commodity has advanced in price much more than canned fish. With the increased cost of production this year, this means that there will be an advance in the price of the finished product.

THE P. DOREEN HITS ROCK.

The well known auxiliary halibut boat P. Doreen struck a rock in Skidegate Channel recently, and the damage to her bottom necessitated her drydocking for repairs upon reaching Prince Rupert. The Nideros towed the Doreen to Skidegate where temporary repairs were made, after which she proceeded to Prince Rupert under her own power.

VANCOUVER WHOLESALE FISH MARKET.

Halibut.—Fresh halibut has been very scarce and will continue so until the weather changes. The past month has been one month of bad weather on the Pacific coast and poor catches have been the result.

Fresh Live Cod.—Fairly plentiful and the prevailing price has been 8c.

Fresh Spring Salmon.—Price is fluctuating from 24c down according to supply which has been uncertain on account of the weather on the west coast of Vancouver Island.

Carp.—London Fish Company, Ltd., still receiving live fresh carp.

Sable Fish.—Scarce owing to bad weather.

Smoked Cod Fillets.—The London Fish Co., Ltd. are smoking these cod fillets and report a keen decrease to 15c per lb. Try some of these when ordering from your wholesaler.

Crabs.—Fresh local caught are scarce.

	Cents per lb.
Halibut chicken	13
Red Springs (heads off)	21
White Springs (heads off)	10
Ling Cod (plentiful)	7
Grey Cod (scarce)	5
Red Cod (round)	5 to 6
Oolachans	12
Soles and Brills	6 to 7
Herring	3 to 5
Skate	4
Perch	6

Shell Fish.

Crabs (scarce) (per dozen) \$1.25 to \$1.50, large	\$1.75
ex-large	\$2.75
Shrimps . . . . .	.22 to .25
Clams	4 to 5

Vancouver Prices Smoked and Salt Fish.

Smoked Sable Fish (black cod, whole)	14
Kippered Sable Fish	20
Fillets Sable Fish	17
Fillets, Cod	15
Smoked Pink Salmon (whole)	20
Kippered Salmon	18 to 20
Bloaters	7½
Kippered Herring	16
Eastern Haddie	14
Western Haddie	10
Herring Chicks in bundles of 5 boxes (per box) . .	18
Salt Herring:	
Medium, 900 to 1000 count, 250 lbs. net . .	\$8.50
Medium, 1400 to 1500 count, 250 lbs. net . .	7.50
Large, 200 lbs.	8.50
Large, 100 lbs.	5.25
Large, 50 lbs.	3.25
Salt Sable Fish (Black Cod):	
200 lbs.	\$22.00
100 lbs.	12.00
50 lb. (Kit.)	6.25
Salt Pink Salmon:	
200 lbs.	\$15.50
100 lbs.	8.50
50 lbs.	4.75
Salt Grey Cod:	
50 to 200 lbs., per lb.	10

Huge fares of codfish appear to be the order of the day from the Atlantic banks of late. Boston and Gloucester have recently received some humper trips ex steam trawlers.

The National Fish Company's steam trawler "Venosta" recently landed a fare of 400,000 lbs. of fresh fish at Halifax after a week's trip. This constitutes the record so far. Capt. Gjert Myhre, formerly of the trawler "Triumph" sunk by German submarine in August 1918, is master of the "Venosta."

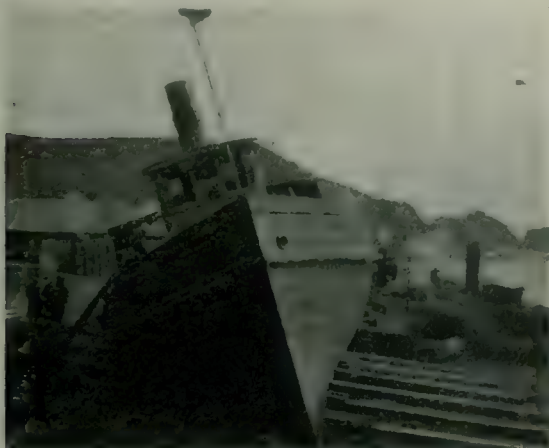


On The Great Lakes



NEW FISHING TUG LAUNCHED.

An interesting event took place at Port Stanley on March 27th., when the new fishing tug "Demijohn", built this winter for Hary Wollatt and John Anderson of Windsor by Thomas Thurston and Son of Port Stanley was launched. The event was staged with all due pomp, the christening being performed by Miss Martha Harris. About one thousand spectators were present from London, St. Thomas and other points. The new tug will start fishing operations at once, the harbor now being free from ice.



The "Demijohn" is 76 feet long all over and has a beam 16 feet, 6 inches with a seven foot depth of hold. Her makers claim she is made on a different model from any craft of the kind hitherto turned out. She has a 4" x 10" white oak bent frame the ribs being set 10" apart which makes her very strong, quickly built and cheaply turned out. T. Thurston and Son say they can set up a frame of this kind in ten days and they are at present at work on another tug of similar construction. They claim that a frame such as they are putting into the tugs of the "Demijohn" type will last eighteen years of ordinary wear.

TRANSPORT FISH BY AIRPLANES.

Major S. Bonnick, of the McCarthy Aero Service of Toronto and Cochrane is responsible for the announcement that an attempt will be made early this summer to place the salt water fish of James Bay in Toronto within twenty four hours from the time they are taken from the water of the bay. He stated that

his firm had a signed contract to make the experiment in order to learn whether the James Bay fisheries could be made commercially profitable. The McCarthy firm which has planes located at Cochrane, has agreed to take fish nets to James Bay, and bring the fish to Cochrane, where they will be placed on the train for Toronto. A little more than two hours will be required for the trip from the Bay to Cochrane.

WANT CONCRETE DOCK AT KINGSVILLE.

A. S. Brown of Kingsville, President of the Lake Erie Fishermen's Association, was in Toronto this week on his way back from Ottawa where he was one of the delegation from Kingsville to interview the Minister of Public Works in advocacy of the construction of a concrete top on the dock in that place in the fishing and other interests. Application was also made to have the electric line extended on to the dock.

TO BUILD PLANT IN OWEN SOUND.

The Dominion Fish Company has purchased a site in Owen Sound and if they are granted some slight concessions from the town will build a concrete and brick structure for the handling of fish from Georgian Bay and Lake Huron Points. It is apparently the intention of the company to centralize their fishing business at Owen Sound but they will maintain depots at Wiarton, Southampton and other points on the lakes. Mr. Noble, superintendent of the Dominion Transportation Company, states that another boat will shortly be placed on the route between Owen Sound and the Soo, making possible a tri-weekly service between Owen Sound, Meaford and Collingwood. A large proportion of the fishing fleet will winter in Owen Sound.

WHEN YOU CALL ON A CUSTOMER IN THE FISH TRADE AROUND THE END OF MAY AND YOU HEAR HE'S "GONE WEST"—DO NOT IMAGINE HE'S DECEASED. HE'S GONE TO THE VANCOUVER CONVENTION.—THERE'LL BE NO "DEAD ONES" THERE.

RECENT LEGAL DECISIONS.

Conflicting Rights of Navigation and Fishery on Public Waters.

In *Anderson v. Columbia Contract Co.*, 184 Pac. (Ore.) 240 (1919), an action for damages was brought for injury to a fish trap caused by a tugboat and barges which ran through the trap, while proceeding down the river in a heavy fog. The plaintiff was allowed to recover by the lower court under the following instruction: "It was also the duty of defendant to operate and navigate said vessel in the channel or usual course in which vessels navigating said river should be operated and navigated." But the Supreme Court held the instruction erroneous.

The right of navigation is a public one, given by the common law, and maintained by the statute which admitted Oregon into the union.¹ This right is paramount to the right of fishing in navigable waters.² The supremacy of this right is upheld by the great weight of American and English authority,³ because of the greater service to the public welfare through unimpaired navigation. The right of fishery does not require the same permanency and freedom of passage as does the right of navigation. Nor does the superiority of the right of navigation depend upon a specified exercise of it,⁴ for both trade and pleasure craft have it. The operation of a vessel out of the usual channel does not extinguish the right, as the lower court in the principal case held, but the navigable part of a stream is from bank to bank, whether the part has been used or whether there is any present or future necessity for so doing it.⁵

In England exclusive rights of fishery, without the right of soil, were granted by the King before Magna Carta,⁶ but since 1215 such rights cannot exist independently of the right to the soil. It is for this reason at common law an exclusive fishery could not exist in a navigable stream. The same rule controls in modern law, and, whenever there is a necessary conflict with the right of navigation, the fishery right must yield. However, the navigator cannot prosecute his privilege as an absolute right, for certain limitations which prescribe a fair and bona fide use of the paramount right save it from becoming exclusive.

Where a navigator negligently failed to see and avoid nets when they could have been avoided without detriment to the reasonable procedure of his voyage, he was held liable for the damage, for he cannot by his own negligence force the two rights into conflict, and then rely on his own paramount one.⁷ A vessel may "take her course" and may go where necessary on a navigable stream, but where a captain acted recklessly and maliciously in continuing his course to the damage of a fishing net, he was held liable for the injury caused.⁸ But in *Wright v. Mulvaney*,⁹ the fact of which closely resemble the principal case, the court said, "he (the navigator) may run his vessel over a net in the night time when he cannot see it, or in the daytime if he cannot avoid it, without interfering with the reasonable prosecution of his voyage, or be driven upon it by stress of weather and not be liable therefor."

Since the facts of the principal case do not come within any of the limitations placed on the paramount right of navigation, it would seem that the court was correct in giving effect to the general rule.—G. J. Knight, '21.

—(1) *I Farnham, Waters*, sec. 27; *Johnson v. Jeldness*, 85 Ore. 657 (1917).

(2) *II Farnham, Waters*, sec. 393; *Davis v. Jerkin*, 50 N. C. 290 (1858).

(3) *Gann v. The Free Fishers of Whitstable*, 11 H. L. Cases (Eng.) 192 (1865); *Mayor of Colchester v. Brooke*, 7 Q. B. (Eng.) 339 (1845); *Anon.*, 1 Camp. (Eng.) 517 (1808); *Moulton v. Libbey*, 37 Me. 472 (1854); *Trustees of Brookhaven et. al. v. Strong*, 60 N. Y. 56 (1875); *Lewis v. Keeling*, 1 Jones (N. C.) 299 (1854).

(4) *The Montello*, 20 Wall. (U. S.) 430 (1874).

(5) *Tennessee and Coosa R. R. Co. v. Danforth*, 112 Ala. 80 (1895); *Porter v. Allen*, 8 Ind. 1 (1856).

(6) *Duke of Somerset v. Fofwell*, 5 Barn. & Cress. K.B. (Eng.) 875 (1826); *Mayor of Carlisle v. Graham*, L. R. 4 Ex. (Eng.) 360 (1869).

(7) *The Octavia Stella*, 57 L. T. (Eng.) 632 (1887); *The Bien*, 27 T. L. R. (Eng.) 9 (1910); *Mason v. Nansfield*, 4 Cranch C. C. (U. S.) 580 (1835); *Post v. Munn*, 4 N. J. L. 61 (1818); *Hopkins v. Norfolk and Southern Ry. Co.*, 131 N. C. 463 (1902); *Horst v. Columbia Contract Co.*, 89 Ore. 344 (1918).

(8) *Cobb v. Bennett*, 75 Pa. St. 326 (1874).

(9) *Wright v. Mulvaney*, 78 Wis. 89 (1890).

QUICK, WORD-OF-MOUTH

Communication Between Fleets and Shore, the Latest Development in the Fishing Industry.

The problem of how to communicate with moving or stationary vessels for the giving of orders, securing information and the many other desirable purposes, has long been a matter of utmost importance to fleet owners. How is this communication to be most efficiently obtained? How are the boats to be controlled and their movements made known to their owners at the shore stations? These questions have puzzled the fishing industry for years. In certain cases wireless telegraphy has been used to solve this problem, with more or less indifferent results. The reason is obvious, in that such a means necessitates costly operators, not to mention the item of upkeep.

There has now developed another means, similar, but possessing unique advantages which will eventually antiquate the old form of "Wireless." This is the Radio Phone. A wireless telephone which provides word-of-mouth communication at a distance and which gives clearer articulation and better speech than we

enjoy in our house phones. The apparatus appears to be remarkably simple in construction; fool-proof to such an extent that it can be operated with ease and precision by men of no previous experience, doing away entirely with the old time necessity of highly technical and trained operators.

Another remarkable feature is the comparatively low cost of the apparatus. The manufacturers claim that equipment can be installed which will operate with excellent efficiency up to fifty miles, at a figure in the neighborhood of \$500.00. Furthermore, stations can be built and installed which will give perfect speech even at a distance of four hundred miles. It would be of the utmost advantage for our fishing concerns to look further into this matter, with a view to making Canadian fisheries among the most modern. Information has been received that the Fishing Industry of Norway and throughout the Scanadavian Peninsula is now installing these equipments on a large scale. This apparatus is of American manufacture and is the product of several years of development and experiment with the one view to making it adaptable to such fields as our industry affords.

FISHERIES SERVICE IN MARITIME PROVINCES REORGANIZED

The Fisheries Branch of the Department of the Naval Service is now completing in the Maritime Provinces what promises to be a very efficient Fisheries service.

A primary object of the new service will be to bring the Department as close to those engaging in the industry as possible. To this end the Fisheries of the three Maritime Provinces, which are generally similar in their character, have been included in one Division for administrative purposes and have been placed under the direct supervision of a Chief Inspector of Fisheries, who is given as extensive powers as feasible and who will be able to co-ordinate the service in the whole of this Division.

As Chief Inspector, Mr. Ward Fisher has been appointed by the Civil Service Commission. His selection should be an exceptionally good one, as he is not only qualified from the standpoint of ability but of training as well. For some years he was District Inspector of Fisheries in western Nova Scotia, a position which he filled with unusual efficiency. He was then transferred to headquarters where for nearly five years he was Assistant to the Superintendent of Fisheries, so that he has a thorough knowledge of Governmental methods, etc.

In the past there was a large number of poorly paid men who were employed as local Fishery Overseers, nearly all of whom were given merely part time service. There were eighty such positions in the reorganized district and these have been replaced by forty-four. The officers for the new district are paid reasonable salaries and are required to devote their whole time and attention to their Fisheries duties. They are all comparatively young and active men and each of them has been on military service overseas.

In installing these officers in their duties, a new departure has been made. In order that they might most intelligently undertake their duties they were called together in groups at different centres and given a course of instructions in methods of administration and in the natural history of fish. The former instructions were given by the Chief Inspector and the latter by Dr. Prince, the Chairman of the Biological Board. These courses of instructions have proved of great value and interest to the new officers. Indeed, it is understood that the Department is so satisfied that to assure proper service, its local officers must have an intimate knowledge not only of administrative methods, but of handling fish life as well, that it has been decided to arrange a yearly course of instruction for them along these lines.

GOVERNMENT HATCHED TROUT, BEAT SIZE RECORDS OF GRAND MANAN.

Remarkable success has been achieved by the Fisheries Branch, in the transfer of the trout fingerlings from St. John hatchery to Eel Brook lake, Grand Manan Islands.

Although the transfer of the fingerlings took place in the fall of 1916, last year trout measuring as long as 17½ inches and weighing 3 pounds 5 ounces were caught in the lake. The conditions attending the trans-

fer of the fingerlings are interesting. Eel Brook Lake was absolutely without trout and in 1916, 10,000 fingerlings were taken from the St. John Hatchery and distributed by officers of the Fisheries Branch. In November, 1917 the Inspector of Fisheries for the District reported that trout were being taken in the lake fully a foot long. As such growth was abnormal, specimens were sent to the Biological Station, St. Andrew's, to scientifically determine their age. It was satisfactorily determined that the trout in question were the result of the 1916 distribution, and it was also satisfactorily ascertained that no trout were ever previously in the lake.

During the summer, Sir Herbert Ames reported the remarkable fishing that he enjoyed in this lake. He said that the fish were of uniform size and weight, being in the neighbourhood of two pounds each. On May 24 last year, Andrew Halkett, Naturalist of the Fisheries Branch saw a trout taken from the lake which was 17½ inches long, and 3 pounds five ounces in weight. He inspected the lake, and states that from information obtained locally, great numbers of trout of large size are being taken.

This tremendous growth has attracted considerable attention. Authorities on the subject hold the theory that the lake must have contained a tremendous amount of foods suitable for different species of fish. The lake is likely to prove a mecca for sportsmen during the coming season.

Andrew Halkett, Naturalist of the Fisheries Branch, Department of the Naval Service, is accomplishing work along the southwestern shore of Nova Scotia, where he is giving talks to fishermen and others regarding natural history of the lobster and means of propagating species. The fishermen are taking deep interest in the work. Mr. Halkett will spend the entire summer in the east, going through Nova Scotia and New Brunswick.

VIRTUOUS BLANK VERSE

(From Reedy's Mirror)

Even the names of intoxicants should be omitted from our literature.—Prohibition Circular.

Begin with Dickens. Oh, my dear,
His pen was much too handy
In praise of pots of bitter —
And tumblersful of —

And Bobbie Burns! We must curtail
His lines that grow too frisky
With talks of "reaming swats" of —
And Goblets "fu" of —

No tale in praise of any inn,
Of cellar, vault or garret,
May say a word of Holland —
Or even table —

Our writers now shall all be dumb
On things that once were merry,
No talk shall be of steaming —
Nor glass of golden —



Port Bickerton

A Guysboro County, N.S.
Fishing Settlement.

By Cecil Boyd



A few weeks ago, Mr. Robert Mosher, President of the Canso Station of the Fishermen's Union of Nova Scotia, in response to the request of a number of the fishermen of Port Bickerton, was planning to visit that fishing port, for the purpose of organizing a Station there. He, in turn, extended to the writer, a pressing invitation to accompany him, which, after some considerable hesitation the writer consented to.

The cause of our hesitation was the great uncertainty of winter travelling in Guysboro County under present antiquated facilities, as well as the outrageous length of time that must be consumed even under the most favorable conditions. Any one who has had occasion to travel along this coast, or inland through the third largest County in Nova Scotia, will recall the deplorable difficulties which exist for those moving from one point to another, and will bear witness to the lamentably backward state of transportation in that section. One can cross the Big Pond on an uptodate liner, and visit "the Old Country" in shorter time than is often required for making the journey between many points in Southeastern Nova Scotia.

The only practical means of reaching the ports along the County coast at this time of the year is on the S. S. "Scotia," a weekly freight and passenger boat, which plies between Canso and Halifax, touching at all the important places each trip, and at the smaller and less important as freight requirements demand. On this occasion, between Canso and Port Bickerton, we touched at Whitehaven, Drum Head, Goldboro, (where 300 barrels of last year's mackerel catch were taken on), and Isaac's Harbor. It was a clear, fresh breezy day, following one of those heavy gales, which the present season has dished out with such a lavish hand, and the coast across the dancing blue water, stood out clear and clean. As the boat steamed along, and mile after mile of the shore slowly slid past, much of it wholly uninhabited, with here and there a thinly settled spot, denoting some small fishing-port, and now and then some more thickly-settled and livelier looking port of call was reached, the scene as a whole was not one that a wellwisher of his native country could contemplate with entire satisfaction. To pass in review, a long stretch of coastline, skirting one of the most fertile and favorably-situated fishing areas in existence; a coastline having at its back, a vast territory capable of wonderful producing possibilities, fitted for mixed farming, sheep ranching, and in many parts holding splendid mining and lumber potentialities; and to behold it lying practically dormant, slumbering almost as slothfully in these stirring days of the Twentieth Century, as it did in the dead days of centuries past, is a sight calculated to fill an interested

party with a deep sense of dissatisfaction with things as they are, and a burning indignation against whatever cause or causes may be responsible for the neglect and undeveloped state of this district. Hampered by its isolation, held back by the restraining paralyzing hand of antiquated transportation facilities, it languishes, or at best progresses but feebly compared with the strides it might and ought to be making, the heights it could without great difficulty attain, were its rich resources given a fair chance to come into their own.

In imagination, one could picture that stretch of shore a thickly-settled thriving territory, peopled with a prosperous population engaged in the development of the resources of shore and sea, the producers of plenty, for the benefit not only of themselves, but also of the nation at large; and there is no legitimate reason in the wide world why this imaginary picture should not become a picture of reality. Just a few important things are needed, one of the first and chief being an uptodate rail system. At least some closer, more certain and regular connection with the outside world is a very vital necessity.

After rounding the rather rough waters of the harbor mouth, we sailed up Port Bickerton harbor about mid-afternoon, but before reaching our mooring place, the Public Wharf, the steamer grounded slightly on a flat. As she was likely to remain there for an hour or so, my companion and I took a dory, and rowed to the wharf, thus landing in a style very appropriate to the place and occasion.

Port Bickerton is only a small fishing port, skirting a fairly decent harbor, the harbor resembling somewhat in shape a large oval, with one end of the oval cut off to represent where the harbor enters the sea, but the place is typical, I believe, in many ways, of many fishing villages along the Nova Scotia coast. It consists, briefly, of a main road, conforming roughly to the shape of the harbor, and running pretty closely round its edge, on each side of this road standing the more or less plain but comfortable homes of the inhabitants, and the few public buildings, which are summed up in two churches, a Hall, and a general store, a branch of S. R. Griffin and Sons of Goldboro. The most conspicuous object in the yard of each householder as we passed along was an enormous pile of firewood, partly cut up and partly uncut. There is one item at least in the high cost of living, and that is that high cost of keeping warm and cooking grub with coal, about which the good people of Port Bickerton do not have to waste any time in worry, for they do not use that article at all. Fir and spruce, and a sprinkling of hardwood takes the place of the black diamond as an article of fuel.



Upon request, a Calender will be mailed having the above picture reproduced in colors.

Acadia Engines

Always Dependable

Manufactured by the largest manufacturers
of Marine Engines in Canada.

Quality, Service and Price Satisfactory

ACADIA GAS ENGINES, LIMITED

Head Office and Factory - BRIDGEWATER, NOVA SCOTIA
Branch Office and Warehouse - - - ST. JOHN'S NFLD.

The inhabitants are honest hardworking folk, thrifty and economical, not overrich in this world's goods, but very rich indeed in that old-fashioned warm-hearted hospitality which after all, is of infinitely more value than much fine gold, when the said fine gold is allied to a grudging and mean disposition. Like many of the Nova Scotia shore-fishing population, the Port Bickerton man is part fisherman and part farmer, nearly every family being the owner of an ox—horses not being greatly in favor in Port Bickerton itself, as the slower moving and more patient ox is considered more suitable for working in the woods. While there, however, we had the pleasure of witnessing an interesting horse race, held on Fisherman's Harbor Lake, the entrants coming from various points around Fisherman's Harbor, Wine Harbor and Port Hilford.

The womenfolk of Port Bickerton are as handy and husky as the men, good cooks and housewives, great mat-makers and knitters, and able to look after a place, and perform the various duties that a primitive mode of living calls for, with the skill born of long practice and ability.

The fishing fleet of Port Bickerton consists of some 25 or 30 boats, all open or hatch decked, and run by gasoline motor power—the Fraser, Fairbanks, Hawbolt, Atlantic, Acadia, Mianus, as well as other makes, each having its list of admirers. In the spring months, the lobster, the herring and the mackerel fishing are the chief lines followed up. Swordfishing in the summer and early fall has developed into quite a lucrative branch of late years, this being one of the earliest and best areas on the coast for these sportive fish, so they claim. I was told of three men in a boat, who one day last summer stocked considerably over 200 dollars, or between 80 and 90 dollars each. This of course was an exceptional windfall, and not to be taken as a true gauge or basis for a fisherman's earnings during the season or year. They catch halibut also, and fall mackerel, but handling or trawlfishing is not gone into very much at present. There is no fall and winter haddocking as it is known in Canso, and very few fish sold fresh, because of the slow, roundabout means of transportation to reach the markets. They haul up their craft on the approach of winter, and during the winter months get out their year's fuel, mend their nets and gear, repair their boats and engines, and if needed rig up new gear, and get new boats built. There are boat builders of skill among them, Jacob Kaiser, a very off-handed and popular chap, holding the honors in this respect, and having while we were there, a fine looking craft in process of planking.

Two fish firms are represented there, S. R. Giffin and Son, of Goldboro, who buy fish through their branch at Port Bickerton, and Leslie and LeVisconte, for which Sydney Kaiser acts as agent. Some two or three miles away is the much similar fishing settlement of Fishermans Harbor, and other ports dot the contiguous coastline. The fishing grounds are convenient, and, as is without doubt true of the whole shore waters, capable of enormous development, but the deadly isolation, the lamentable lack of regular, rapid and up-to-date connection with the big market centres acts as a dead hand on the dazzling possibilities and much-to-be-desired progress of this naturally promising district, as it does throughout the length and breadth of Southeastern Nova Scotia.

UTILIZATION OF FISH WASTE IN CANADA.

Editor Canadian Chemical Journal: According to the most reliable statistics obtainable, and classing everything from sardine to whale as fish, Canadian waters produce 685,000 tons of fish annually. Approximately one-fourth of this catch consists of fish that are unfit for human consumption, and are, therefore, considered as waste. From the remaining 500,000 tons anywhere from 20 to 25 per cent must be deducted in dressing for market. Thereby constituting a total waste of 300,000 tons, a waste which can be readily and easily converted into marketable products, namely, fish meal, fertilizer, and oil. Undoubtedly you are aware of the tremendous demand for these products. Fish meal has been fed on the Pacific Coast for years, and it is now considered a necessity by the dairy farmers there. The mere fact that they pay \$100.00 and over a ton for the product is sufficient proof of the demand. In 1916 the United States Department of Agriculture issued a bulletin No. 378, to set forth the value of fish meal as a food for domestic animals and to encourage its manufacture and general use. In this pamphlet are reports of many interesting experiments, and it is interesting to note that in no instance was the flavor of the butter, milk, eggs, or meat affected by the feeding of the fish meal, and in each case there was a remarkable gain in profits, and in one instance as high as 94 per cent for each pig.

Considering that the Canadian laws now compel lake fishermen to either bury or provide some sanitary means for the disposal of the waste fish, it is only natural to suppose that they turn to a method whereby a profit may be realized instead of an additional expense. The manufacture of fish meal fertilizer and oil surely affords this opportunity, and is in fact, the only possible way of disposing of this waste at a profit. Consider the results to be obtained by the united efforts of these fishermen of the lakes, directed toward the utilization of this waste. To illustrate my point, we will figure on one (1) ton of raw material composed of herring, entrails, eel-pouts, and spoiled fish. These 2,000 pounds of waste would produce 540 pounds of meal, worth \$20.00; 260 pounds of oil, worth \$30.00, totalling in all \$50.00 worth of finished product, which, under favorable conditions, could be manufactured at a maximum cost of \$10.00, thereby leaving a profit of \$40.00 produced from 2,000 pounds of what was not only a waste but a nuisance.

Possibly a few only have ever thought of it, but it is a well-known fact that the meat packers of to-day are making their largest profits from what was formerly a waste and a nuisance, and were they to return to the methods used fifty years ago it would be utterly impossible for them to operate successfully with the competition of the present day. Returning once more to our subject of the fisheries, you will find conditions quite different, with the exception of a few concerns.

The process of cleaning and washing fish has remained unchanged, some of our modern machinery proving even more wasteful than methods used in the past, particularly some of the modern high-speed machinery used in the salmon canning industry. I dare say that 40 per cent of the salmon is wasted in this way. After a brief summary of these details, I am sure that you will realize that the fishermen of this country have not awakened to the possibilities of these great by-products of the fisheries.

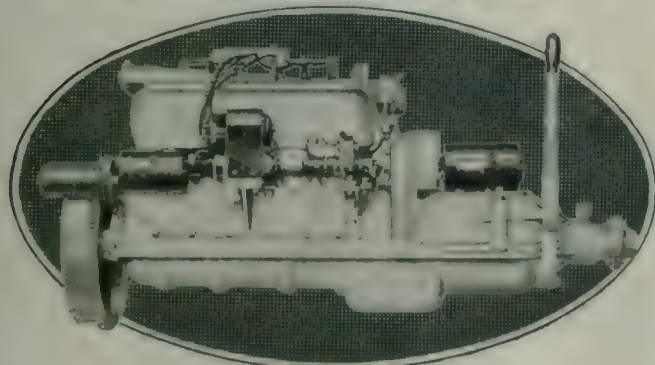
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Undoubtedly, the past four years have taught us something of the importance of conservation and utilization of our waste products. But, nevertheless, we are still behind the times in our methods of handling fish waste. There seems to be but one solution to the problem; every man engaged in the fisheries must investigate this most important branch of the industry and do his bit for the cause. The time has come for the individual fisherman to realize this undeveloped state of affairs and consider it not only an important part of his business, but his patriotic duty to supply this country with the much-needed fish meal, fertilizer, and oil rendered from this waste and nuisance.

Let us hope that the day is not far distant when the Canadian fishermen will supply the farmers of this great agricultural country with the fish meal and fertilizer manufactured from these 300,000 ton of fish waste, and that Canada will again show her resourcefulness by producing within herself a ten-million-dollar produce, which she now must purchase from other countries.

(Signed) ALFRED J. CURTIS,
563 William St., Buffalo, N.Y.

THE MIAMI AQUARIUM

That cheaper and better fish can be obtained if the dealer and consumer will co-operate to make "every day a fish day," is the view expressed by fish culturists at the newly established aquarium at Miami, Florida. The aquarium will be opened on April 1st, but it is already completed and is said to represent the latest equipment in scientific study of the under-seas citizen.

In announcing the opening, Mr. James Asbury Allison, president of the Miami Aquarium Association, invites the scientific world to co-operate with his association and make the myriad specimens of fish a more important food product of the daily menu of human life. There are said to be five hundred varieties of fish to study at Miami and a scientific investigation into each variety will be started to ascertain its food-giving-value. The life and habit of the fish will be studied, with the results that is expected the world will be given information it has never had before.

With the assistance of well known scientists, the largest aquarium south of Philadelphia has been established. Fish taken from their peaceful abodes in the deep-sea will find their way into spacious tanks with their accustomed surroundings, that is, the same water and its submarine flora will travel with them from gulf stream itself which these great varieties of fish make their habitat. Unlike the other great aquariums in this country where the water must be heated to meet the temperature of the "home" from which they are transported, the Miami aquarium offers everything that the fish may expect, even if taken from the sea. Coupled with this innovation in fish museums, a biological laboratory has been established, where the fish experts will assemble and disseminate the information they gather from their daily confabs while working on the various varieties coming under their observations.

Fish are often looked upon as not being meat, although there is no characteristic difference between fish-flesh and the flesh of any other animal. The bulk of it is protein and water. The fish culturists at Miami will not only give the exact amount of protein of the fish but recipes for preparing them.

Fish Meat Food as Breakfast.

It is known that there is nearly pound for pound as much protein in fish meat as in beefsteak, and that fish could be substituted for all other kinds of meat every day in the year without ill effects. Oily fish, like shad, herring and eels, are especially nutritious, affording a large quantity of fat for fuel as well as the tissue-building proteins. Fish roe generally contains more protein than beef, and some fat in addition, and fish meat is quite as easily digested as other forms of meat.

There are other sound reasons for looking to fisheries for increased production of nitrogenous food in time of a national emergency, the Miami fish culturists point out. Nearly all land animals which furnish meat depend upon agriculture for their food. A great part of the vegetation now derived by cattle might be used for human consumption, cattle and poultry, for the most part, merely convert one available form of food into another. On the other hand, fishes consume directly or indirectly animal and vegetable forms which in their natural state are available and useless as food for man, such as the aquatic plants which derive their nutriments and mineral fertilizers from the waters. The materials thus assembled are converted directly or indirectly by the fishes into food for available mankind. It is therefore obvious that the adoption of a fish diet by a larger number of people will shift a part of the burden from land vegetation to aquatic vegetation. Land animals, which are warm blooded and actually receive heat from their surroundings, use all their food in the necessary activities and body growth.

The different varieties of sub-sea life to be found in these waters will also be exhibited in the aquarium, thus making Miami a mecca for millions of people, the same as the aquarium in New York City has afforded since its establishment many years ago. Not only a mecca for people to get a glimpse of the fish but to inspect the latest in scientific endeavor to find a new food to replenish that which is rapidly diminishing, due to the heavy demands from European countries for meat products.

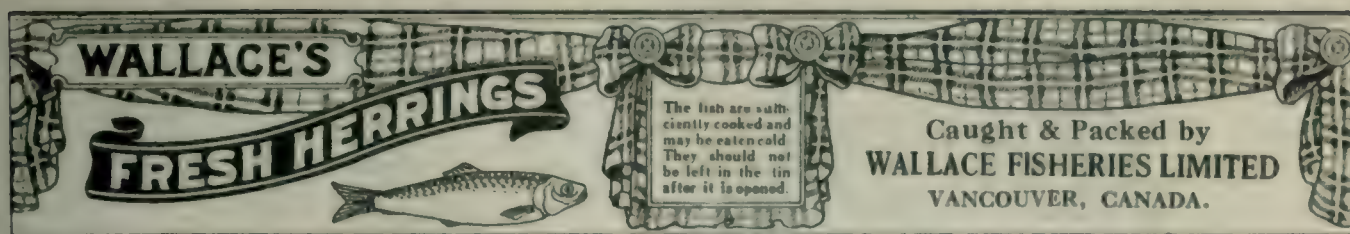
The shark-skin leather industry is but in its infancy, although companies engaged in this work will probably do a business of more than \$40,000,000, Dr. Allen Rodgers, professor of Industrial Chemistry at Pratt Institute, Brooklyn, New York, recently asserted in an address in Washington. "More than 700,000 sharks will be caught in 1920. Shark-skin leather is far superior to that of animals in wearing qualities."

The man-eating shark offers an important solution to the H. C. of L., according to Rodgers, who declared that there are 75,000,000 pounds of shark meat wasted each year, representing a loss of \$7,500,000.

"Shark meat is equal to halibut and much superior to cod-fish," he asserted.

Under-sea Motion Pictures

At Miami, too, scientists will be encouraged in their investigations by the use of motion pictures in under-sea photography, thereby supplying specimens and exchanging data with the other great aquariums of the world. The association had the assistance of Louis K. Mowbray, Technical Director of the British Aquarium at Bermuda, who also supervised those at Boston and New York, before coming to Miami. Mr. Mowbray will be associated with the Miami Aquarium Association in the same capacity.



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Installed in the Miami aquarium are fifty large exhibition tanks, one of them being the largest in America and the second largest in the world.

Mr. Carl G. Fisher, of Indianapolis, a well-known fish expert, is vice-president of the Association, and the secretary and treasurer is John Oliver Lagorce, associate editor of the National Geographic Magazine and vice-director of the National Geographic Society.

Upon the advisory Committee of the Miami Aquarium Association are found such distinguished scientists as Dr. Barton Warren Everman, international authority on the subject of sea-life and director of the Museum of the California Academy of Sciences; Dr. Hugh N. Smith, U. S. Commissioner of Fisheries; Dr. David Fairchild, Agriculture Explorer and Biologist; Dr. Alexander Graham Bell, Inventor of the Telephone; Gilbert Grosvenor, president of the National Geographic Society; Prof. W. H. Longley, Department of Marine Biology, Carnegie Institution; Dr. Charles Haskins Townsend, Director of New York Aquarium; Dr. Henry Fairfield Osborn, president of the American Museum of Natural History, and a number of other distinguished scientists.

One of the first discoveries to be sought will be the link between the fauna of the deep-sea and the land, which the scientific world seeks to solve. It is here the scientists will make their first investigation, and the results so obtained will be given to the world, which seems, the scientists say, a most baffling enigma.

The Newfoundland seal fisheries are a flat failure this year. Altogether the catch amounted to around 35,000 seals.

It is reported that the Federal Government intent at an early date to hand over their natural resources to the Western Provinces.

At least two new companies will be operating next season at Lesser Slave Lake, Alberta, viz., Mr. M. Madden, of Drift Pile, and R. Jones & Company, of Faust. Both of these concerns have stored a supply of ice.

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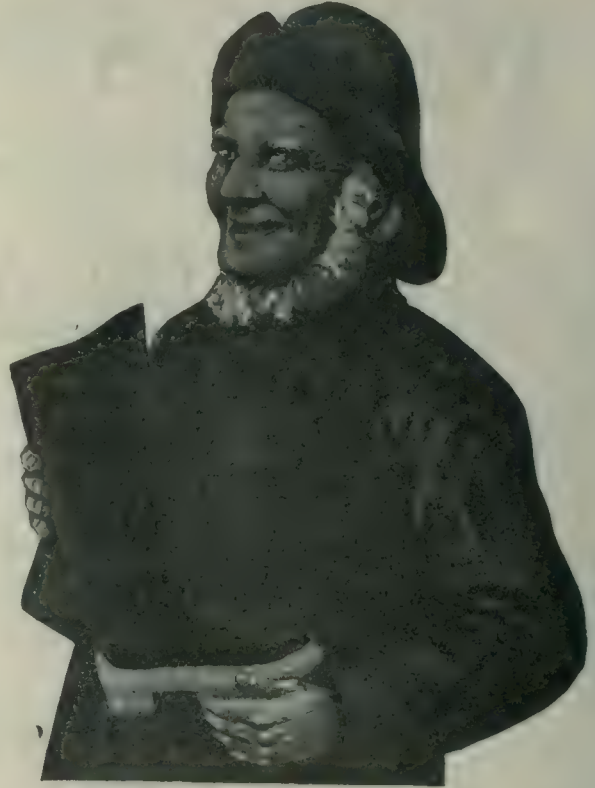
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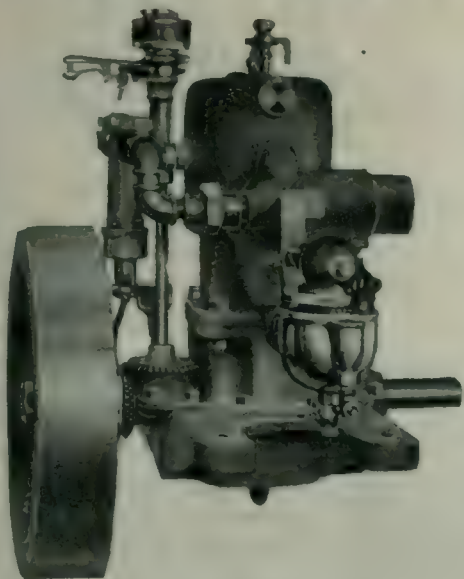
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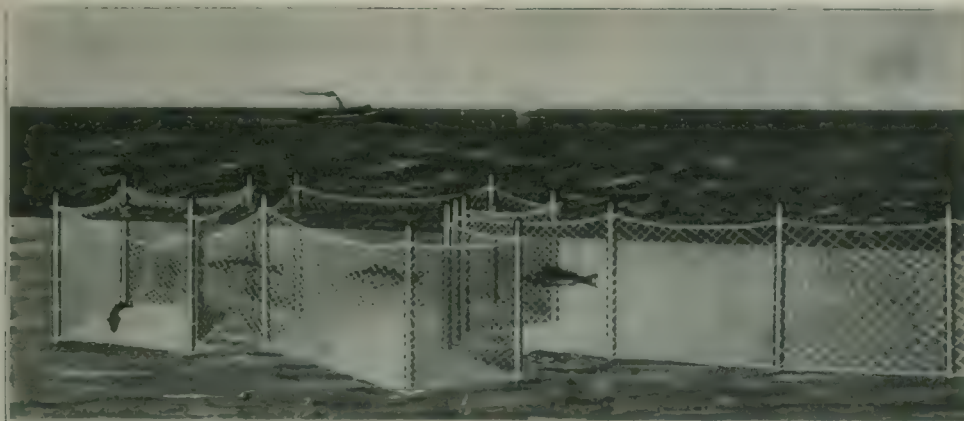
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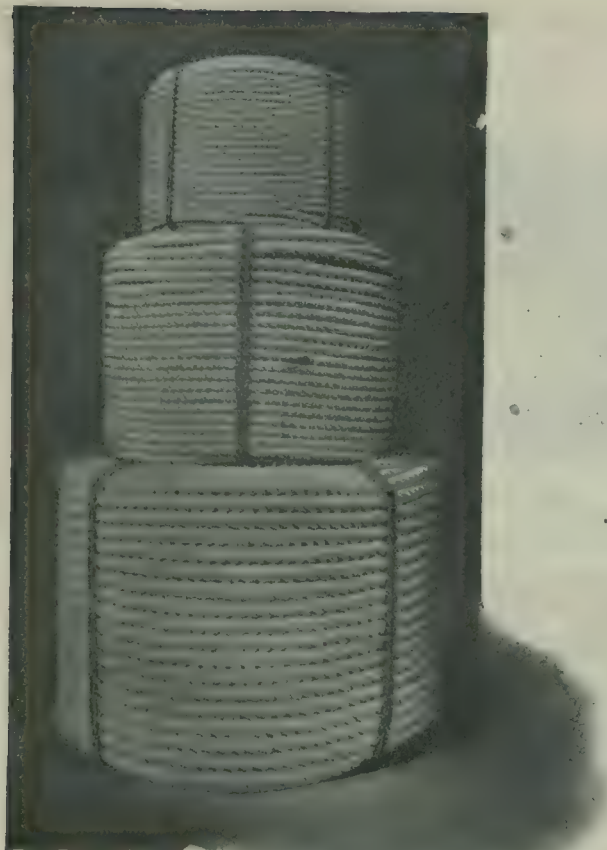
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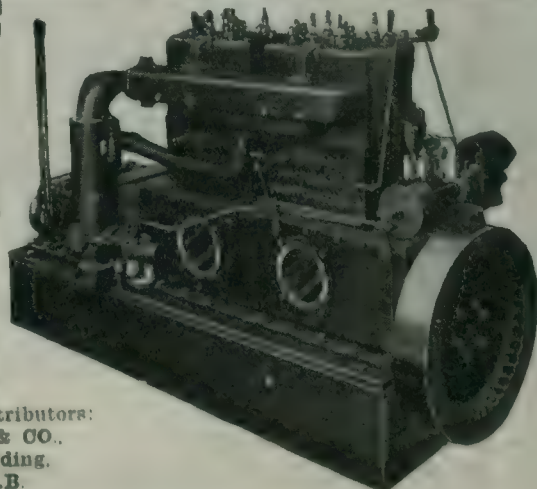
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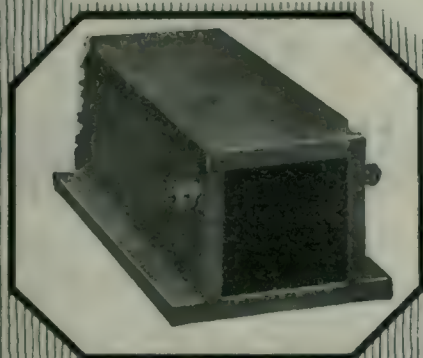
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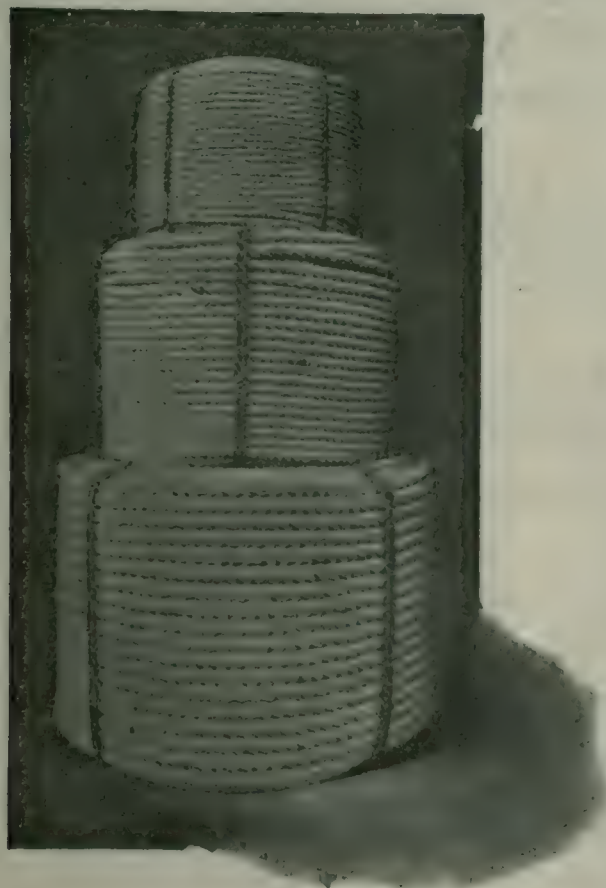
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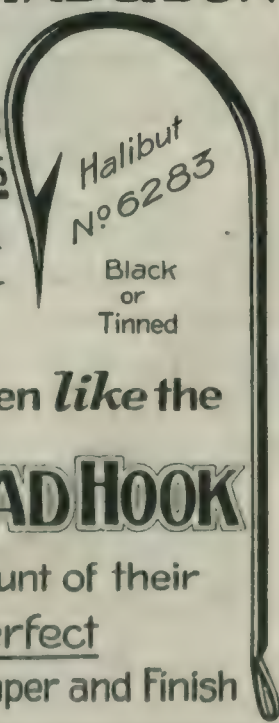
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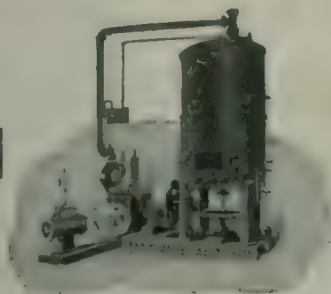
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Mr. Cobb was for 17 years a field agent of the U. S. Bureau of Fisheries, and in the course of his duties visited practically every fishing settlement and packing establishment in the United States many times; later was editor of the Pacific Fisherman, and now is Director of the College of Fisheries, University of Washington.

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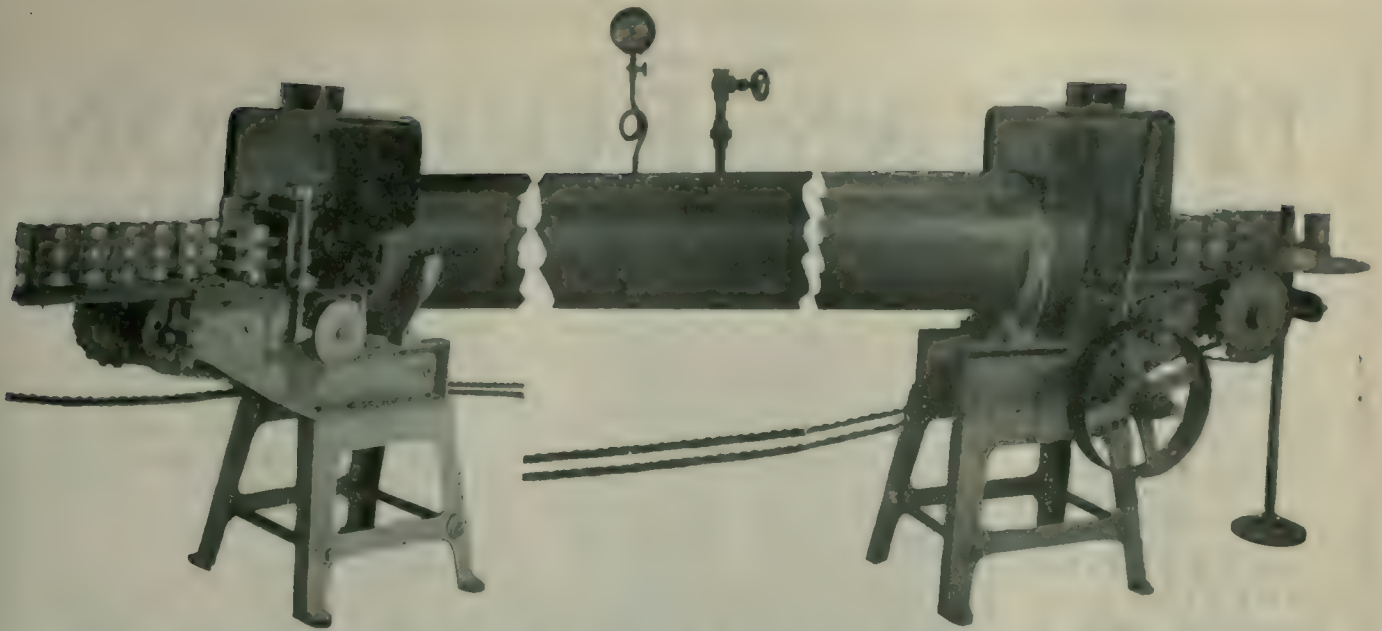
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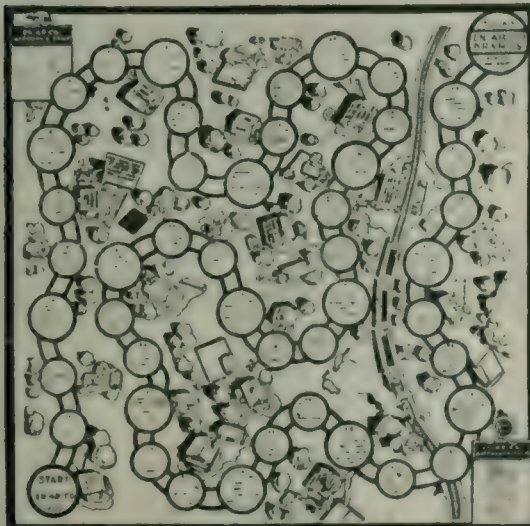
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Levesons Limited		

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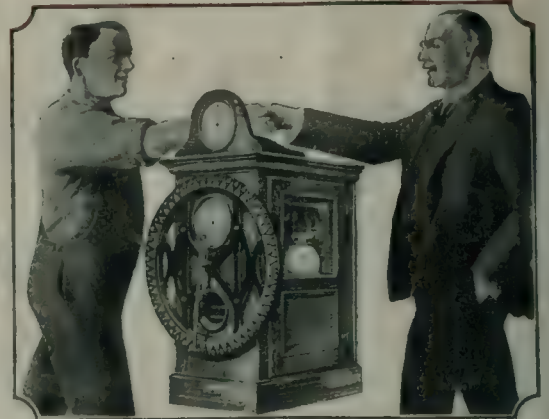
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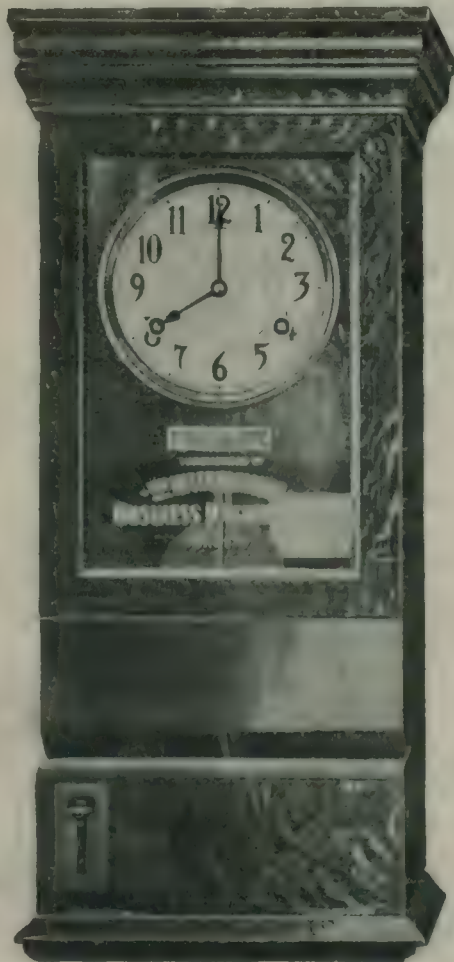
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VOL. VII.

GARDENVALE, P.Q., MAY, 1920

No. 5

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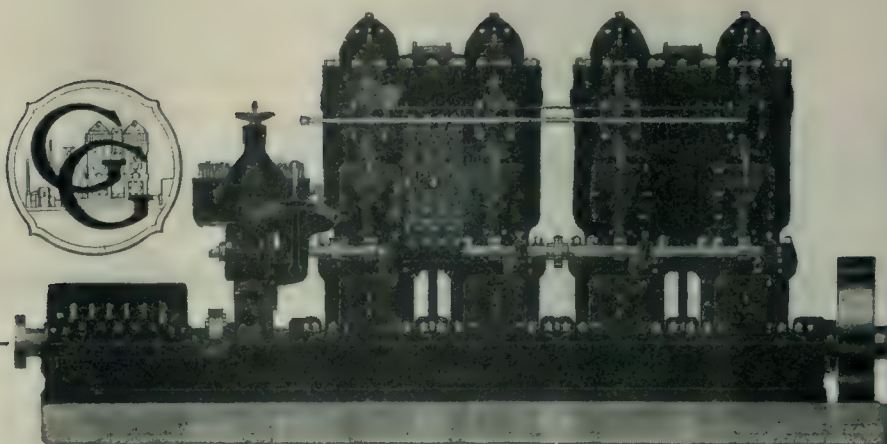
Cold Storage 7000 tons. Ice Making Capacity 80 tons daily
Ice Storage 2000 tons

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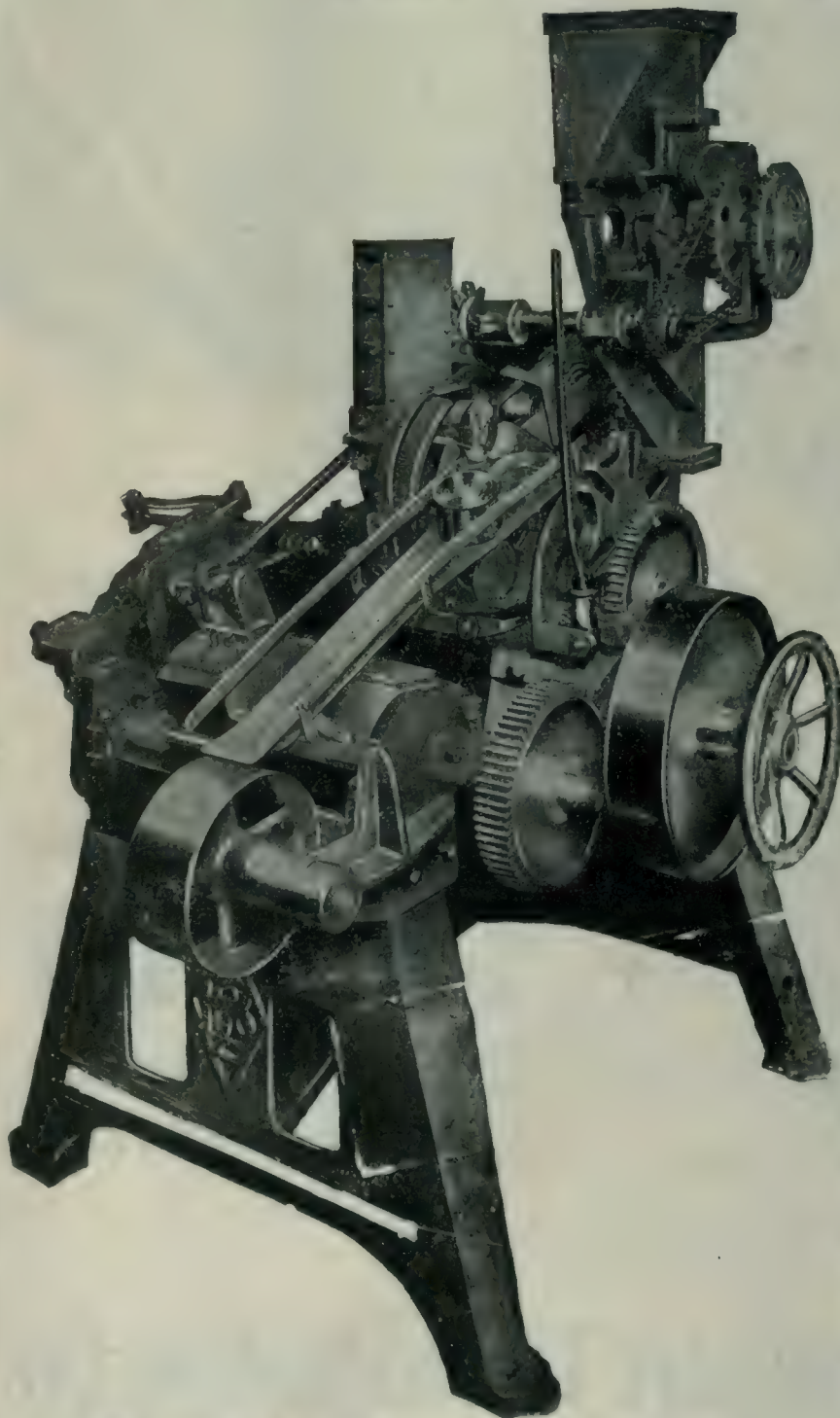
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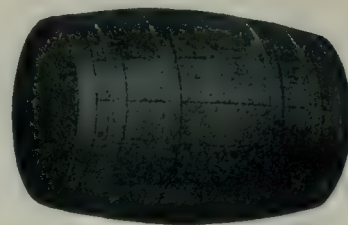
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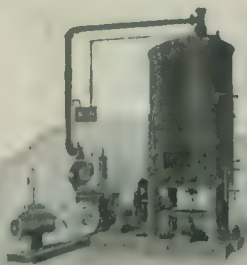
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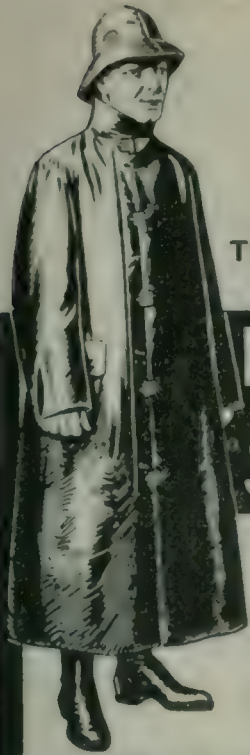
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Mr. Cobb was for 17 years a field agent of the U.S. Bureau of Fisheries, and in the course of his duties visited practically every fishing settlement and packing establishment in the United States many times; later was editor of the Pacific Fisherman, and now is Director of the College of Fisheries, University of Washington.

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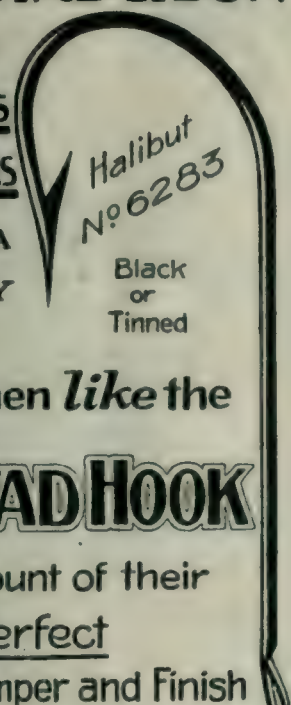
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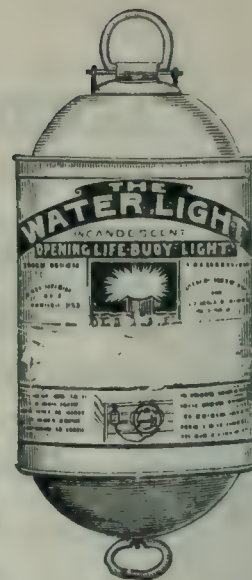
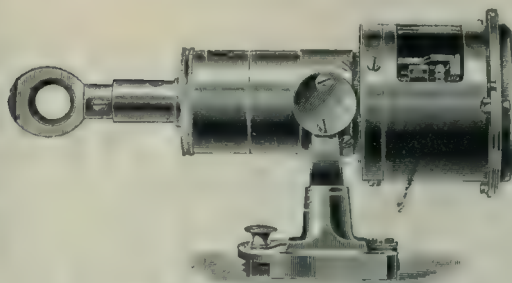
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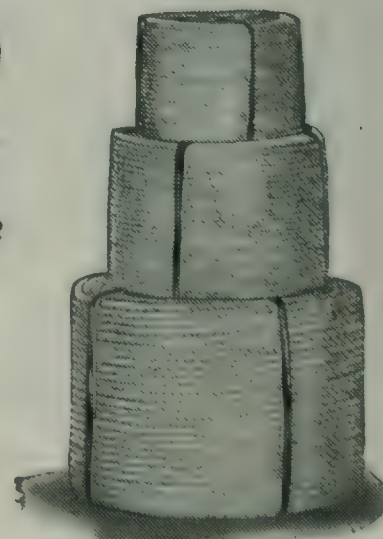
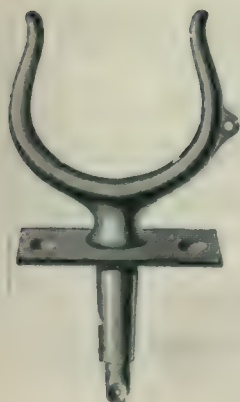
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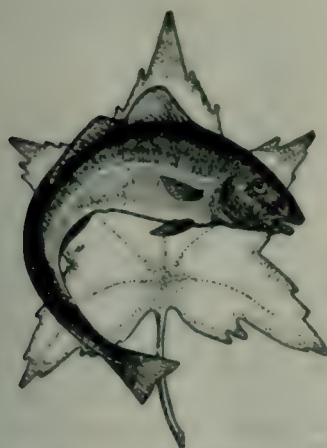
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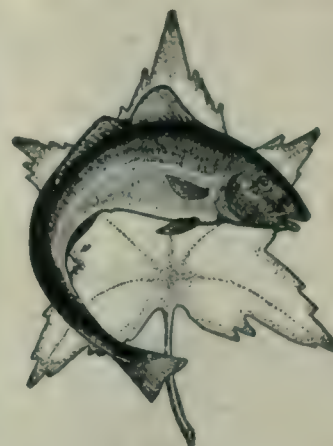
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EDITORIAL

MAY 1920.



FREDERICK WILLIAM WALLACE
Editor



Canadian Fisheries Association Convention, Vancouver, B.C.

Signs are not wanting at this early date to indicate that the coming Fisheries Convention at Vancouver on June 3rd, 4th, and 5th, is going to be the greatest fishery congress ever held in Canada. A big attendance is foreshadowed and fishery scientists, officials and tradesmen from the United States and Newfoundland will be with us.

Conventions of this nature are signs of progress. When members of an industry are enabled to get together under the pleasant auspices of good fellowship, they have solved one of the greatest obstacles to development. Before meeting, Jack Robinson thinks his competitor Bill Smith is a man of low morals, a price-cutting, double-dealing Bolshevik, and vice versa. After getting together in Association meeting of Convention, both find out that they have made a mistake in their mental estimates of each other, and Jack admits that Bill is a keen business man but a mighty good fellow in the main. With that new appreciation of the other, both get together and work to smooth out the little and drawbacks incidental to the business of the two of them. What getting together does for two men, an Association and its convention does for the industry as a whole.

In conventions, the business man in the industry meets and talks with the administrative officials and scientists who are doing work very closely allied to him in many ways. In meeting and conversing thus, all get something out of it—some interesting fact or an idea worth developing. In convention, one meets the allied trades—the refrigerating engineer, the bar-

rel maker, the vessel designer, the machinery manufacturer, etc., and all of them have a story to tell and something to learn.

Apart from its educational and constructive value, the Convention at Vancouver is noteworthy inasmuch as it will be the first time that East meets West. We have been keeping too far apart and the industry has undoubtedly suffered thereby. For the development and progress of our mighty fisheries, a national organization with national ideals is absolutely necessary. It must do the work which cannot be done by local bodies. Local organizations are regarded as being local. They have no weight outside of their locality.

The Canadian Fisheries Association is a national organization. It embraces east and west and counts its members within every meridian of longitude between Atlantic and Pacific. It is the national organization and always will be. Its reputation for broad-mindedness in policy and freedom from radical ideas and steady plodding progress during the past five years, and a record of good work done, is sufficient to justify its continued existence and to claim that it is the voice of the Fishing Industry of Canada. The Vancouver meeting will strengthen this claim.

A report from Cumberland County on the first of the month indicated that owing to the scarcity of bait very few lobsters were being taken. Factories had only started canning on May 1st.

FISH INSPECTION ACT POLITICALLY MURDERED.

All who have the interests of the Canadian Fishing Industry at heart will not be pleased to learn that the Bill to amend the Fish Inspection Act, as regards uniformity of containers, inspection and grading of fish, effecting both the Atlantic and Pacific coasts, has been killed again. It died in Committee, Monday morning the 10th May. Despite the importance of the Bill, it was the first one killed so far this Season and it also has the distinction of being the first to die in such a manner in many many years. So far as this Session is concerned, Members of the Parliamentary Committee maintained that it has gone beyond recall. The next step, if any further move is to be taken, must be to introduce it the next Session.

After the Committee had proceeded for some time the previous week, the attention of the Chairman was called to the fact that a quorum was lacking and then a motion for the Committee to rise was carried. D. D. McKenzie of Cape Breton North and others claim that this killed the bill. However, when the Committee met again Monday morning an attempt was made to revive it. With a quorum in attendance the Chairman, E. K. Spinney, called the meeting for the discussion of the Bill. Mr. Duff, of Lunenburg, N. S., attested the bill. D. D. McKenzie maintained that the Committee was governed by the same rules as the House of Commons, and supported his contention by quoting a ruling of the Speaker in 1824, another by the Speaker of the British House of Commons, in 1836, (Bourinet.)

These three authorities agreed that Committees operated under the same rules and regulations as the House of Commons, and the Committee of the House,—that the motion for the Chairman to leave the chair was in order, and that such being carried, the matter before the Committee was dead unless revived by unanimous consent.

The Bill has now been Assassinated three of four times—largely by political braves with knives ever sharp to murder anything introduced by the Government. The benefits of the Bill are not considered and not even a modification of any of its parts is suggested.

However, the Fish Inspection Act is not easily killed outright. It will, like the proverbial cat, revive again. Those who killed it this time can go back to their constituencies and tell the fishermen that they did their best to kill the Act and our Fish trade as well.

FISH HATCHERIES. TO BE OR NOT TO BE?

Many arguments, pro and con, have been heard on the subject of the artificial propagation of fish. It has gone down to a matter of serious contentious opinion. There are those who believe that fish hatcheries are the only remedy to replace the depletion caused by men; others contend that Dame Nature is the best

hatchery of all and believe that close seasons will do the trick and give the fish a chance to recuperate.

A great deal of controversy on the subject has raged out on the Pacific Coast in connection with salmon propagation, and recently a member of Parliament made a scathing indictment against the Government Hatchery policy on the floor of the House.

We are fortunate in securing for this issue, two articles on the subject by able writers. These present the case for and against. The question will also be very thoroughly discussed at the coming Convention in Vancouver.

ATLANTIC FISHERIES COLLEGE.

We are glad to note in the Halifax press an agitation for the establishment of a Fisheries College. At the Vancouver Convention it is hoped that a definite decision may be arrived at with regard to the Pacific Fisheries College. The plan adopted on the west coast might be used by the Atlantic industry and the two schools established simultaneously.

The whole scheme depends upon the Industry. If they are willing to equip a building for the College, the Federal and Provincial Governments will consider the future upkeep and maintenance of the institution.

SPECIAL CONVENTION ISSUE OF THE CANADIAN FISHERMAN.

The June issue will be a special issue devoted to the proceedings at the Convention of the Canadian Fisheries Association at Vancouver, June 3rd, 4th, and 5th.

The number will be greatly enlarged, fully illustrated and a full transcript of the speeches and discussions will be recorded. The very important and valuable papers read at the Convention will be included.

This issue will be well worth keeping as a permanent record, and it is the intention of the publishers to produce a magazine which will be a credit to the staff and in keeping with the development of our Fishing Industry.

INTERNATIONAL SCIENTIFIC COUNCIL FOR FISHERIES RESEARCH.

The very important question of forming a Council to undertake fishery research work in the waters of North America will be taken up at the coming Convention of the Canadian Fisheries Association at Vancouver. From letters received from scientists and administrative officials in the countries we desire to have co-operate in this work, the United States and Newfoundland, the outlook is very encouraging and so far not a single dissentient note has been struck.

A motor-boat was launched at Wallace Bridge for Bridge the Burnham & Morrell Company. It has a speed of 10 knots and carries a capacity of 20 tons.

"THE CANNING OF FISHERY PRODUCTS"

Under the above title, Prof John N. Cobb, Director the College of Fisheries, Seattle, and formerly editor of the "Pacific Fisherman," has produced a text book which is undoubtedly the standard work on the subject.

The book is written for the cannery operator in simple, terse language free from technicalities, and is a most comprehensive work, covering the history and the processes for canning all the varieties of fish which lend themselves to preservation in this manner.

The work is profusely illustrated with photographs and drawing of the fisheries, fish, canneries, canning machinery and various phases of processing, and the general make-up of the volume is of a very high high order.

Text books of this nature relating to practical operations in our fishing industries are very scarce in North America and when a book like the "Canning of Fishery Products" comes along we hail it with pleasure as being a worthy nucleus of a future library of practical commercial fishery literature. Canadians engaged in canning fish of any kind should get this book—the price of which is \$7.50 plus 50 cents postage. Copies can be had from the "Pacific Fisherman," 71 Columbia Street, Seattle, Wash., U.S.A. No canner should be without a copy.

ECHO OF ONTARIO GOVERNMENT FISH BUSINESS UP IN HOUSE

Toronto member in Public Accounts asks for information re Nipegon fish contract.

Col. H S. Cooper, North-West Toronto, sought to obtain before the Public Accounts Committee of the Ontario Legislature, information as to why J. A. Little had secured a larger fishing contract on Lake Nipegon than others. The amount mentioned in the public accounts as having been paid by the Government for fish delivered by Little was \$40,000. D. Macdonald of the Game and Fisheries Department, could not explain, saying that the contract was let by Hon. Mr. Macdormid.

Colonel Cooper asked if Mr. Little got such a large share because he was a good Conservative to which Mr. Macdonald replied, "I am not a politician."

Without the question having been raised, the witness stated that he was prepared to say that neither himself nor any of his relatives ever got a five cent piece from Mr. Little in connection with the Nipegon fisheries.

Some discussion also arose in the Legislature concerning the act to amend the Game and Fisheries Act, whereby certain restrictions hitherto applying to guides for hunters were applied also to fishers. Objections were made that a man could not go out for a day's fishing, hiring a boat, without seeing that the man he employed held a departmental certificate. A penalty attached for this line of action was struck out of the bill, and restrictions on granting licenses for hunters' guides were not permitted to extend to the fishing industry or sport.

NEWFOUNDLAND DRY COD.**Large Quantities Bought for Halifax Account.**

Halifax, N.S., April 26.—Large quantities of dry cod are being purchased by Halifax merchants in Newfoundland, and during the last ten days seven cargoes,

aggregating 35,000 quintals, have arrived at this port. This fish is of the 1919 catch, surplus of which was on hand in St. John's and outports. The price paid in Halifax is \$13 per quintal, making the value of the importation in the past week and a half, \$445,000. In the ordinary course of trade this fish should have been marketed abroad last year from Newfoundland, but, owing to the condition of the European market and the exchange situation, it was held over and is now available for Halifax merchants to supply the West Indian and Brazil markets.

LABELS.

The label constitutes one of the great selling points in canned goods. The attractive label catches the eye and invites further investigation and, usually, questions as to the contents of the can which bears the label. The manufacturer of the product, in putting up his goods invariably wishes to have the very best and most attractive selling point to catch the customer's eye in the case of canned goods it is the label.

When a Company such as the Schmidt Lithograph Company is compelled to make extensive additions and improvements to its present plant such as is being done at the present time at Second and Bryant Streets San Francisco, there is but one reason and that is that their business has become so extensive that the new additions are absolutely necessary.

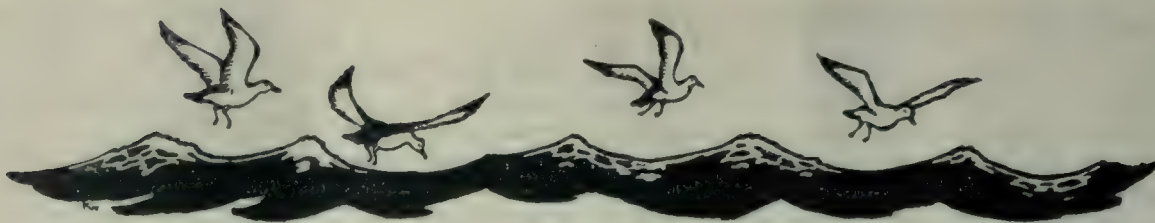
The new structure will be five stories high, 43 ft. by 125 ft. and immediately adjoining the present building. There will also be a one story structure 79 ft. by 125 ft. on the Sterling street side adjoining the present structure. On top of the present building there will be an additional structure for the accommodation of the rapidly growing advertising service department. When these additions are finished the entire structure will cover an area 225 ft. by 250 ft. facing three streets, Second, Bryant and Sterling with a total floor space of more than 200,000 sq. ft.

The five story building will be of brick finished in terra cotta conforming with the present building. A tower 183 feet high will surmount the new structure and carry a four faced clock with dials 8 feet in diameter which will be easily seen from Market Street. The roof of the new structure will be occupied by a roof garden; hand, volley and basket ball courts and athletic equipment.

A real feature of the new plant will be the conversion of the present office into an indoor recreation and lunch room. This room will be equipped with musical instruments, enabling the employees to dance during their spare moments, and in addition to this recreation room there will be card and committee rooms where various committees on safety, athletics, etc., will be privileged to meet.

Vessels coming from the fishing grounds of the Middle West Pubnico report that fish is not scarce, but weather conditions prevent good catches. Fishermen on the rivers report alewives scarce. Very good catches of lobster were made in some districts and the price of small ones has dropped to 12 cents per pound, and dealers are paying 18 cents per pound for large ones.

Ontario people not using enough Government-controlled fish to keep the fishermen busy says Minister.



FISH INSPECTION ACT KILLED AGAIN

FROM OUR OWN CORRESPONDENT

Ottawa, May 11th.—For this session at least, Bill No. 50, to amend the Fish Inspection Act is dead as the proverbial doornail. Those who had been hoping for this bill to bring about an improvement in the standards of fish packing in Canada, must possess themselves in patience, until another session, when the Minister may introduce a similar bill and seek to get it through the House.

Taking every advantage of a rule of the House and Committees which says that a motion for the chairman to rise without the committee making a report, kills the measure before it, a small handful of Liberal members from the Maritime Provinces, members of the Marine and Fisheries Committees of the Commons, accomplished the overthrow of this legislation on May 10. Perhaps a share of the blame should also be attached to the members of the committee who were not opposed to the bill but should not think it worth while to attend the sittings and make a fight against the opponents of the bill.

The chief objection to it had been on the grounds that inspection was made compulsory and that fines were provided for those who failed to live up to the provisions of the proposed legislation. William Loe-gie was agreeable to giving the bill a trial. He did not like some of the clauses but thought they could be ironed out as the committee went along. There had been considerable talk on the bill at an earlier meeting of the committee when it was explained by departmental officers as an attempt to improve the standard of the Canadian pack of pickled fish.

The real fight, however, developed at last week's meeting, when J. H. Sinclair (Antigonish and Guys-boro) declared himself opposed to the principle of compulsion in the bill and fought it on that ground. In this he was seconded by F. J. Pelletier (Matane, Que.): R. W. Wigmore, (St. John); and W. G. McQuarrie (New Westminster) wanted the committee to approve the principles of the bill. In their opinion it would build up the Canadian fish trade overseas and be of benefit to the industry.

The chairman's attention was called to lack of a quorum, at this point in the meeting, and there was nothing to do but adjourn. Instead however, the motion that the committee "rise" was put and carried. Then arose a little hubbub, with D. D. McKenzie, (Cape Breton N.) protesting that according to all the rules of the House and committees the bill was dead and should remain so. The chairman was of a different opinion and brought it forth again at a meeting on Monday morning (May 10.)

No sooner had the final meeting been called to order

than the fight began. William Duff (Lunenburg) protested that the bill was dead and there was nothing before the committee. D. D. McKenzie quoted Speakers of the Canadian and British Houses of Commons and also Bourinot to support his statement. Mr. Wigmore protested against throwing out the bill on a mere technicality, and the chairman, being asked for a ruling, said that in his opinion the discussion of the bill should be proceeded with. From that time it's fate was a foregone conclusion.

William Duff moved to report progress, while Wigmore moved to approve the principles of the bill. The latter motion was defeated by one vote: 7-6. Then Pelletier, of Matane, moved that the chairman leave the chair. For a long time E. K. Spinney, (Yarmouth and Clare) who was in the chair, hesitated about putting that motion. He wanted to change to a motion to adjourn, but Pelletier held to his point and quoted Bourinot to show that a motion for the chairman to leave the chair was always in order and that such a motion took precedence over any other business. This was finally put and carried by seven votes to five. Thus this bill, which it was claimed by several members of the committee and by the departmental officers would have helped place the industry on a sound footing, was defeated by a "small handful of wilful men." However, the other members of the committee who did not attend the meetings must bear their share of the blame.

It was intimated that a similar bill may be introduced next session at the instance of the department, and that when this is done, every care will be taken to avoid a repetition of yesterday's episode.

MARKING OF TINS CONTAINING FISH IMPORT-ED INTO FRANCE.

Mr. Hercule Barré, Canadian Government Trade Commissioner in Paris, writes under date April 6 amending his report on the marking of tins containing fish which appeared in Weekly Bulletin No. 845, page 803, to read as follows:—

By the French Government regulations, all tins or other receptacles containing fish must have the name of the country or origin "Canada" indelibly stamped or embossed on such receptacles, and also on packing cases containing same.

The marking of boxes is not necessary for shell-fish.

During the war exceptions have been made in certain cases, but the exceptions are only temporary, and it is strongly recommended that these regulations should be complied with.



If the Treaty Is Not Ratified Why Give the Advantage to the Other Fellows



The following correspondence is quite self explanatory, and there is ample reason right here for the appointment of an advisory board of commissioners for British Columbia fisheries. What is the United States doing in regard to the ratification of the Treaty? Has Ottawa any information as to when this step will be taken? It's a long time since the International Commission made their report. Meanwhile British Columbia is suffering, and the fishermen of Puget Sound go right on getting the salmon.

Vancouver, B.C., April 3, 1920.

L. H. Darwin, Esq.,
State Fish Commissioner,
Seattle, Wash.

Dear Sir:—

You will see by the enclosed copy of an Order in Council dated February 28th, 1920, relative to the regulations covering (inter alia) the weekly close times for trap net fishing in Canadian Waters during 1920. It was ordained that each trap net should be equipped with a "V" shaped opening in the lead of such trap net which opening shall remain open and unobstructed during the full period of weekly close time.

I have a copy of the Washington Fish Laws, 1917 edition, which provides for a similar "V" shaped opening "in the Columbia River District."

May I ask whether the regulation referred to, has been changed to include traps on Puget Sound?

I understood the rules in respect to traps on both side of the line were made identical under the Treaty negotiated last year, but which unfortunately was not ratified by the United States Government.

I shall be much obliged if you will kindly enlighten me on this point, and if a more recent edition of the Puget Sound regulations has been issued, favour me with 3 or 4 copies at your early convenience.

Thanking you in anticipation of your courtesies, I remain

Yours faithfully,

B.C. SALMON CANNERS' ASSN.
W. D. Burdis, Secretary.

State Fish Commissioner & State Game Warden,
State Fisheries Building,
Seattle, Wash., April 8th, 1920.

W. D. Burdis, Esq.,
B.C. Salmon Cannery Ass'n.,
City.

Dear Sir:—

Responding to yours of April 3rd.

The trap closing regulations on the Columbia River differ from those in Puget Sound. The Puget Sound regulations do not require the "V" shaped opening such as is required on the Columbia River. There has been no change in our Food Fish Laws since 1917.

I am sure I have furnished you a copy of our laws as it stands today. However, I am sending you another copy, under separate cover and if you need more, if you will let me know, I will be pleased to furnish them.

Respectfully,

(Sgd.) L. H. DARWIN,
State Fish Commissioner.

Vancouver, B.C., April 8th, 1920.

L. H. Darwin, Esq.
P. O. Box 384,
Seattle, Wash.

Dear Sir:—

I am much obliged for your favour of the 6th instant, and the copy of the 1917 Fisheries Regulations, which have not been changed to govern operations in 1920.

There has probably been a slight misunderstanding in relation to the insertion in the Canadian Trap regulations for 1920, of a rule that traps must have a "V" shaped opening left for use during the weekly close time, on this side, when a similar rule does not apply on Puget Sound, for I understood, (though the Treaty did not materialize), the respective 1920 regulations would conform to the conditions to have been imposed under the Treaty; and which has the reason why I wrote you on the subject.

Again thanking you, I remain

Yours faithfully,

B.C. SALMON CANNERS' ASS'N.
(Sgd.) W. D. Burdis, Secretary.

Dominion Fisheries, British Columbia,
Rogers Building,
Vancouver, B.C., April 21st, 1920.

W. D. Burdis, Esq.,
Sec. B.C. Salmon Cannery Ass'n.,
London Building,
City.

ENFORCING WEEKLY CLOSE SEASON FOR TRAPNETS.

Dear Mr. Burdis:—

You will remember having discussed with me the question as to whether the new regulation requiring the "V" shaped opening in the lead of trapnets was to apply to those operating in Canadian waters on the west coast of Vancouver Island when the same requirement was not exacted from trapnet owners operating in Puget Sound.

The Department replies that whilst the requirement does not obtain at the present time on Puget Sound, when the International regulations come into effect it will be applicable, and it would be obviously unfair to the operators of traps in other parts of British Columbia if those on the southern portion of Vancouver Island were allowed to be operated in a different manner. The Department does not consider it would be wise to make such an exception.

Will you kindly inform those corresponding with you on this question of the decision reached.

Yours faithfully,

(Sgd.) F. H. CUNNINGHAM,
Chief Inspector of Fisheries.

Vancouver, B.C., April 23rd, 1920.

Colonel F. H. Cunningham,
Chief Inspector of Fisheries,
Vancouver, B.C.

Dear Sir:—

I beg to acknowledge the receipt of your favour of the 21st instant, advising me that the Department refuses to place our trap operators on the Straits of Fuca on a parity with those on Puget Sound in respect to the "V" shaped opening in the lead to be used during weekly closed seasons, ordained by the Canadian Regulations, February 28th, 1920, but which had been **intentionally** omitted from the Washington State Regulations, and which Commissioner Darwin states have not been changed since 1917, and intimates will not be changed for 1920.

The reason advanced for said refusal:—viz. that to eliminate the provision for a "V" shaped opening in traps on the Canadian side of the Straits of Fuca, would be unfair to operators in other areas of B. C. waters, shows a very inadequate appreciation of the conditions.

In no other part of the Canadian waters, of which I am aware, are our operators faced by such an unfair advantage to their American competitors, as is assured by the discriminatory regulation referred to. If Messrs. Todd & Sons and others over here have to provide and use the "V" shaped opening every week, the result will be that the fish so exempted from capture on this side, will proceed to Puget Sound and be caught in the traps there.

It would not be so bad if such fish were passed along for our gillnet fishermen to capture, but why our

Government should legislate in favour of Puget Sound trap owners, even after the unfairness of such a regulation is shown them, is inexplicable to ordinary minds.

The trap owners in other B. C. Locations would not raise the slightest objection to a regulation so manifestly warranted in relation to the conservation of the salmon supply, any more than they oppose the different definitions of the hours for closing fishing in different localities.

Surely the Department would be warranted in righting such a manifest injustice to our people, whose interests are so flagrantly menaced by the Washington Authorities.

If the case was reversed I am certain the Americans would have used every means of influence possible to have the regulations made synonymous immediately.

I would therefore recommend that the "V" shaped opening in lead of the traps **be not enforced** until such time as the International Fisheries Treaty is in force in all its conditions on both sides of the line, when the regulations requiring this opening in the lead, will *inter alia* be cheerfully accepted by Canadian Trap operators in the Straits of Fuca.

Thanking you in anticipation of your endorsement of this reasonable and rational request, I remain

Yours faithfully,

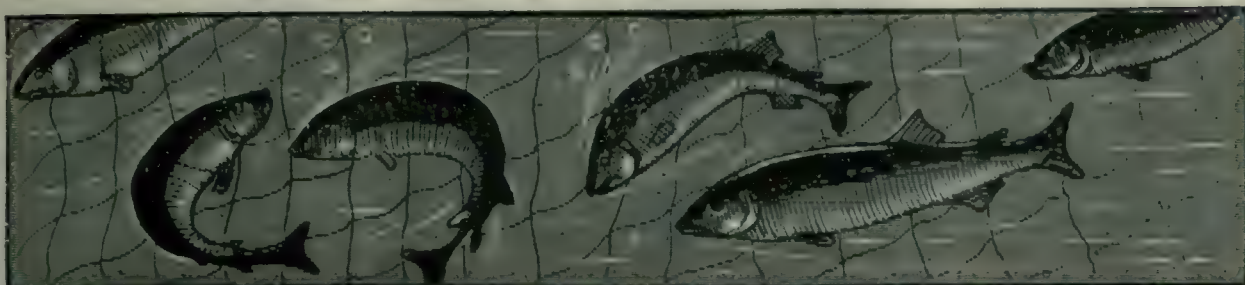
B.C. SALMON CANNERS' ASS'N.
(Sgd.) W. D. Burdis, Secretary.

ATLANTIC SALMON HATCHERIES SUCCESSFUL

Atlantic salmon undergoing incubation in hatcheries operated by the Federal Government in the Maritime Provinces are worked to capacity. Eggs are of exceptionally fine quality, and the outlook is for a record hatch and distribution. This is the report of S. J. Walker, Hatchery Inspector, who has just returned to Ottawa after an inspection tour.

During the last few years, artificial propagation achieved wonders in re-stocking rivers and streams in the east which had depleted or were tending in that direction. Not only are such rivers as the Restigouche in as good condition as they ever were, but salmon are again frequenting streams in Hants and Quebec Counties, Nova Scotia, as a result of stocking from hatcheries. They appear in great numbers in Petitcodiac, and other streams in New Brunswick; and in Prince Edward Island, they are coming back to the rivers in such large numbers that the collection of eggs, which had not been possible for over twenty years, is again being successfully conducted.

Even lay men who have had an opportunity to watch re-stock rivers closely, speak highly of the efforts of the Department. Honorable C. J. Osman, of Hillsboro, N.S., who is keenly interested in the Petitcodiac River, wrote to the Department on April 16th, stating that the Department's efforts had met with great success, as during the last two days he spent on the river, September 12th and 13th last, when it was in high flood it seemed to be almost full of salmon. If the stream was properly protected it will, he feels sure, in a few years time, contain as many fish as it did in the early days of settlement, provided of course that the placing of fry is continued systematically for a few years longer.



FISH HATCHERIES NOT THE REMEDY

WILLIAM DUFF'S CHARGES SHOULD BE INVESTIGATED

By COLIN MCKAY



"It should be clear to anyone who intelligently studies the Department blue books that a large sum of money is positively wasted annually on the artificial propagation of fish. Especially so in view of the much larger sum spent in the shape of salaries and traveling expenses for the maintenance of an army of outside officers, numbering nearly 1,000, besides 40 permanent and 18 hired patrol boats with their crews, whose main duty is police work, i.e., enforcing the observance of the close season and other restrictive measures for the protection, chiefly, of the very kinds of fish that are artificially propagated at such enormous expense in our hatcheries."

Thus Mr. Duff, who hails from the Grimsby of Canada, (Lunenburg), told Parliament, and so far his drastic criticism has not been answered.

"Any sane man," adds Mr. Duff, "is bound to conclude that either the enormous expenditure on fish breeding, or that on fish protection, should be largely reduced."

And Mr. Duff presents facts and figures which he claims "cause thinking men to marvel at the stupidity of permitting in a comparatively new country with a sparse population, and with what are practically virgin fisheries in lakes and rivers of huge dimensions, the expenditure of so much money on the artificial propagation of fish for so long without question."

Mr. Duff is certainly rough on Dominion Fisheries policy with his direct indictment of stupidity and enormous waste, and his implication of insanity.

In this matter of fish culture it might have been thought that Canada would have profited by the experience of European countries. But apparently it has not done so; apparently it has repeated the experiments of Europe on a prodigious scale on a much greater scale relatively than the United States. Possibly the Dominion Fisheries Department could make out a good case for its experiments in view of the different conditions prevailing in our fisheries; and experiments in fish culture on a small scale would hardly be regarded as conclusive of anything in view of the vast extent of our fisheries. But it would be interesting to know whether the closing of the lobster hatcheries was due to war induced economy, or a recognition of their uselessness, as claimed by Mr. Duff. The answer to that would throw some light on another question: whether the establishment of the numerous hatcheries was governed by scientific considerations purely,

or was unduly influenced by politicians, anxious to create jobs in their constituencies and also the impression that they were alive to the need of modern improvements.

It is quite unlikely that the permanent officials of the Department are ignorant of European experience; nor is it likely that their experiments would have developed into extravagant proportions, if political influence had not stimulated their activities beyond the requirements of science. But it is possible the average politician, the average outside official and the fishing population generally, have little definite information regarding European experience. Britain has considerable fund of technical information about the fisheries, mostly buried in blue books; France has numerous books, dealing with every phase of the fisheries, but probably none are available in the English language; Germany has a ponderous technical literature concerning the fisheries. Doubtless the Departmental library at Ottawa is well stocked with technical publications dealing with the Fisheries but they are not accessible to fishermen. And Canada has no Fisheries Schools, which might serve as centres for the dissemination of technical information.

Experiments in fish culture have been carried on for ages. In Pliay, and Cato we find passages which would seem to indicate that the ancient Roman practised aquaculture with considerable success. But at most a few wealthy Romans cultivated private oyster beds, and domestic fish ponds, in order to supply their own tables. They did no more for the general fisheries than Salmon Fishing Clubs, holding fishing privileges in certain rivers do for the commercial salmon fisheries at the mouth of such rivers. The Chinese have also practiced aquaculture for ages, but they have confined their attention to a few species of fish, and have never obtained any important results.

The British tried fish culture generations ago, came to the conclusion that it was not of much value, and have not since changed their minds. So with the Belgians and the Dutch. Between seventy five and fifty years ago the French went in for aquaculture with their usual thoroughness, and in 1869 M. Rimbaud, an official of the French Fisheries Department and a Chevalier de la Legion d'Honneur, published a book on the subject entitled "L'Industrie des Eaux Salees." M. Rimbaud's conclusions are of interest, because in them they have stood the test of time, and have been

corroborated by German and Scandinavian experience.

The French savant concluded that aquaculture was useful in restocking rivers that had been overfished or denuded of their finny inhabitants in some way, but that its importance even for fresh water fisheries could be easily over-rated. Also he recognized the usefulness of the cultivation of oysters and mussels, but he claimed that attempts at the artificial propagation of the finny tribes of the seas was by comparison with the enormous reproductive power of nature about as valuable as throwing a bucket of water in the ocean in an effort to float a stranded ship. Mr. Duff's study of the results of artificial propagation in Canada has brought him to a similar view, for he says, "the artificial propagation of a species of fish like the Pacific Salmon which has to be maintained in enormous numbers to keep the canning industry going, as a means of restoring this fishery, is about as futile as pouring a bucket of water into the Pacific with a view to swelling it."

M. Rimbaud did not accept the view, then held by the British and Belgian fishing authorities, that the sea fisheries were inexhaustible, and that over fishing was impossible. On the contrary he claimed that wherever there was an increase of human population there was a depletion of the fish in neighboring waters, and he argued that the best form of aquaculture was the adoption of the well established principle of agriculture that better crops can be obtained if the land is given periodical rests.

Mr. Peek: "Do I understand that Hon. gentleman's argument to be that the hatcheries were not beneficial?"

Mr. Duff: "Yes, that is what I am trying to prove. Take the case of Atlantic salmon, of which also many millions have been propagated annually for very many years from ten regular hatcheries and six subsidiary ones. The fishery is scarcely holding its own, as may be seen from the following figures, giving the catch for the whole Atlantic coast:

	cwts.
1913	40,237
1914	38,202
1915	39,805
1916	41,801
1917	39,865

Mr. Duff said the catch for 1918 was believed to have been considerably less than for 1917, while that for 1919 was practically a failure. He then points out that a "few small Scottish rivers without the aid of hatcheries maintain a yearly production of salmon greater than that of the whole Atlantic coast of Canada from the Bay of Fundy to the Labrador."

The superintendent of Scottish salmon fisheries said in 1916: "We in this country do not rely on artificial hatcheries for the upkeep of the stock of salmon. We have magnificent natural spawning grounds in our Scottish rivers and we prefer to rely upon the process of nature for the replenishment of the stock."

Mr. Duff's statement that the salmon catch of the whole Atlantic coast of Canada is less than that of a few Scotch rivers is startling, especially in view of the money spent on salmon culture. What is the explanation?

The British have a spirit of sportsmanship, a capacity for considering the interests of future generations,

which makes observance of restrictive measures designed to prevent overfishing an easy matter. In Canada we appear to need an army of officials to secure a not very strict observance of the fishing regulations, and we are not noted for a provident concern for the future. But even so, considering the number and size of our rivers, and the sparse population compared with Scotland, it is possible that overfishing is the sole or principal cause of the apparent stagnation of the salmon fishery?

Many smaller streams in Nova Scotia that once afforded excellent trout fishing are now almost barren. Their drainage area has been swept by forest fires, destroying the subsoil. When the snow melts in the Spring, there is no soil and vegetation to hold back the water, and the streams roar in freshet to the sea. After rains the streams are flooded for a few days; and in dry seasons do not contain sufficient water to support fish life to any extent.

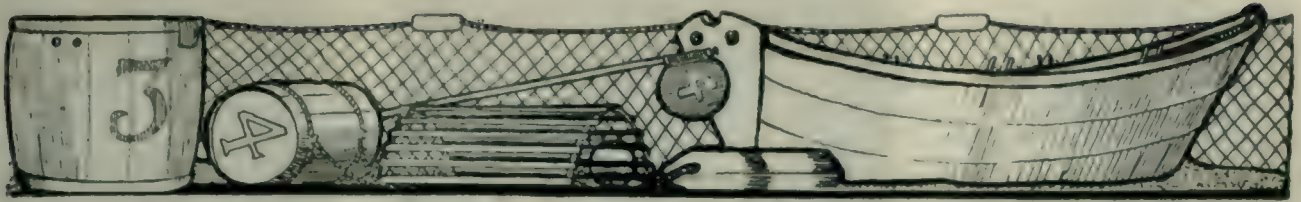
No doubt the larger streams frequented by salmon are to some extent affected by the ravages of forest fires over their drainage areas. Scottish rivers are not troubled by the alternation of freshets and droughts. Snows do not accumulate to any extent during the winter, and the Grampian hills being well wooded and protected from fires, the seepage of the rains is more regular.

Then we may have something to learn about the effects of dams, with the fishways that often look inadequate, and of pollution. Years ago the great city of Glasgow emptied its sewerage into the Clyde. Concern for public health rather than for fish life compelled Glasgow to establish sewerage reduction works, which manufactures vast quantities of fertilizer and drains into the Clyde a liquid residue as clear as crystal. Baillie Stewart assured me that the liquid distillation of the vast sewerage system might be used as drinking water without harm, though he knew of other Scottish distillations that he would rather recommend a beverage.

The Dominion Fisheries Department is not concerned with the possible effects on fish life of the pollution of rivers, not only from sewers but from mills and factories of various sorts. The Provincial Governments have jurisdiction over river fisheries. Perhaps because of this divided authority the Dominion Fisheries officials have not made a proper study of how the fry from their hatcheries fare after they are dumped into the rivers and streams.

In any case Mr. Duff's conclusion that fish hatcheries are useless demands public attention. Before the war the Government was spending nearly half a million annually on artificial propagation; for that amount the officials ought to show results, or be able to explain why they do not obtain results. Meantime some of the money which Mr. Duff says is now being wasted might be diverted to a study of the effects of the methods of fishing, of dams, fishways, and pollution.

The French still carry on the artificial propagation of fresh water fish and they obtain results. One thing they learned many years ago is worth noting, and that is that artificial propagation can be overdone; that a stream will only support a certain quantity of fish life, and that to turn fry into a stream filled with hungry fish is to encourage cannibalism.



The Case For Fish Hatcheries

ARTIFICIAL PROPAGATION HAS JUSTIFIED ITSELF IN CANADA.

By WILLIAM HOWARD MUSSEN



In view of the recent attack in the House of Commons on the policy of the Fisheries Department regarding artificial propagation of fish, I, being deeply interested in this matter, took the trouble to make personal investigation. This is a study in which I have been engrossed for years, and being quite convinced that the remarks by the member of the House were unwarranted, I endeavored to secure data by means of which I might convince my friends. While I am not personally acquainted with many fish producers in Canada, I feel that they are in possession of these facts, but they may still be of service to them. For their edification, I place the following information, which I have compiled with great difficulty, at their disposal.

In the first place, as to the efficacy of fish culture, the success attained, especially with fresh water fish, leaves the experimental stage far behind. Investigation and experiments show that from 1 to 15 per cent of the eggs of fresh water fish deposited on the natural spawning grounds are fertilized. The fall eggs lie on the bottom of the stream from five to seven months and are exposed to the ravages of egg-eating fish, birds, and insects; to smothering from silt and to draught and frost, through the exposure of spawning beds by receding water.

In actual tests made by Fishery Officers, in which the fish spawned naturally, the eggs were gathered and hatched under close observation. It was shown that with Atlantic salmon, 10 per cent of the eggs were found to be fertilized and hatched, and with speckled trout, less than 1½ per cent. An examination of the spawning grounds in Fifteen Mile Creek, Babine Lake, and other creeks in the district, made shortly after the spawning season of 1918, showed 80 per cent of the salmon eggs in the creek dead and fungused together. In addition, large quantities were left high and dry when the water receded.

Sir Humphrey Davy estimated that not six per cent of the salmon eggs deposited naturally came to perfection and Stoddart held that only four or five fish fit for the table were the result of 30,000 ova on the spawning beds. (Prof. Prince in "Fish Culture in Canada.") Comparing the results of artificial propagation with this waste in nature, as high as 98 per cent of the eggs taken by artificial methods under favorable conditions, have not only been fertilized, but have been hatched and the fry liberated. The average hatch in Canadian hatcheries varies from 50 to 85 per cent, depending on the species and the conditions under which the eggs are taken. This scientific data was gathered under normal conditions and it is, therefore, absolutely refutable.

I noticed that the member made quite extensive reference to the situation in British Columbia, but his argument is not based upon facts. He says that fish hatcheries on the coast are handling mainly sockeye eggs. This is a fact because this species is the most valuable. But he continues, by means of juggling statistics, to show a continuous drop in sockeye production; and a proportionate increase in the chum and pink varieties of salmon. Apparently he hopes to prove that despite the hatching of sockeye eggs, this fishery had been steadily declining, while without artificial assistance the other two species of salmon are steadily increasing. What he would say is that the efforts of the hatchery are only tending to retard rather than to develop the species. There is no doubt at all that the pack of pinks and chums has rapidly increased the last few years. This is not due to their growing abundance by any means, but merely to the fact that in recent years a demand has been created for these varieties. A copious supply was always to be found, but there was not always a market for them. Despite the increasing demand for the sockeye variety, this is still the most popular, and this is the reason why packers are so anxious to put up as much of it as possible.

A statistical demonstration was given showing that the sockeye fishery in the Naas River was showing a serious downward trend. This, however, should have absolutely no association with his argument because there is no hatchery on the Naas and that river system has never been stocked from any hatchery. But on the Skeena the Government operates two hatcheries, and the fishery there is being rapidly restored. Relative to conditions on this river, the M.P. also gives statistics, but for some reason or other he dropped off in 117. Up to this point, admittedly there had been for some years a general downward trend. In that year the pack amounted to 65,760 cases of sockeye, but the year following it rose to 123,322 cases, and in 1919 to 184,945 cases, just 2,000 cases short of the biggest pack put up in any one year since the fishery began.

An interesting fact which I learned recently, demonstrates what the hatcheries are doing on the Skeena system. When the Babine hatchery, at the head waters of the Skeena River, was established, it was put on a stream which was not frequented by salmon. After this stream had been stocked for a number of years, salmon began coming to it every year in such numbers that the hatchery there is now filled from this stream alone.

There is one other hatchery in the north, at Rivers Inlet. It is not suitably located, but while the pack of sockeye in this area has been falling off during

the past season, it is discovered that a greater number of fish have reached the spawning areas tributary to River Inlet than for many years past. This is one of the most encouraging indications that conditions are improving.

As to the Fraser, conditions there are well known. No system of hatcheries would offset the ravages on the fishery. The situation is an international one, and it is hoped that this year a pact between United States and Canada will be enforced to give this fishery the protection which it needs.

Coming eastward to the Great Lakes, I find the strongest supporters of the Fisheries policy of artificial propagation. Fishermen there are in touch with actual conditions, and they have been able to see for themselves just how the situation has been improved. It is unfair for the M.P. referred to, to take the production of the whole lakes to demonstrate the effects of the hatcheries, because until recently hatching was confined to Lakes Erie and Ontario. Not a great many years ago, Lake Ontario was considered depleted of whitefish. In 1900 the catch was 1,291 cwts, but now it is second only to Lake Erie, and the catch of 1917 amounted to 13,680 cwts. Years ago, Lake Erie was also seriously overfished. In 1895 the catch was 1,480 cwts., but twenty years after that, in 1915, the catch had risen to 18,322 cwts., but in 1917 there was a decline due to unfavorable weather conditions. The fisheries in both these lakes are now in a very healthy state.

Fishermen appreciative of the excellent results obtained, are co-operating to the fullest extent to assist this artificial propagation. Practically all the fry of whitefish, salmon trout, pickerel and ciscoes (532,000,000 in 1919), distributed in the Great Lakes are hatched from eggs procured from fish commercially caught, and sold by the fishermen. Were it not for the hatcheries here, hundreds of millions of eggs from these fish would be destroyed each year. The hatcheries have performed such splendid work that close seasons have been done away with in the Great Lakes.

The whitefish fishery of Lake Winnipeg is likewise steadily improving, and last season the catch per net was larger than ever before. There has been a steady increase from 1915-16 when the catch amounted to 26,453 cwts., to 1918-19 when it reached 30,525 cwts.

The hatching of Atlantic salmon also shows most satisfactory results. Rivers in New Brunswick like the Restigouche, the Pollett and the Petitcodiac are in as good condition as in their palmy days. Salmon are also frequenting streams in Hants and Kings counties Nova Scotia, as the result of stocking from hatcheries. In Prince Edward Island they are coming back to rivers in such large numbers that the collection of eggs which had not been a feasible proposition for twenty years or more, is again being conducted with success, the collection there last year not falling much short of a million eggs. The improvement in the Restigouche, northern New Brunswick, is probably more pronounced than in any other salmon stream on the Atlantic coast. In 1871 the local Fishery Officer reported that he did not consider the main Restigouche capable of affording good fishing for more than rods. At present, there are frequently more than one hundred rods fishing at the same time, and there has been excellent fishing for the last fifteen years, and each season conditions show decided improvement. The increase in the rentals received by the New Brun-

wick Government from angling leases is a sure index to success. In 1883 the leases were sold by public auction for \$2,045. In 1917 the upset price for the same waters was \$17,750, but considerable more than this amount was taken.

Besides these observations which anyone may note by study of statistics and fish culture, there are innumerable other details of considerable interest. For instance, I conversed recently with a friend of mine from New Brunswick, and he spoke enthusiastically of the great success which had attended the efforts of the Fisheries Department in re-stocking the Petitcodiac River. Last fall he spent two days on the river, and he said it seemed to be almost full of salmon. "If the steamed is properly handled," he said, "I feel sure than in a few years time, salmon will be as abundant there as in the early days of settlement, provided that the placing of fry each year or each other year is continued for some time."

In 1913, 100,000 whitefish fry were distributed from the whitefish hatchery at Hicks Lake, British Columbia. These are not native to the Province and were not previously found in Hicks Lake. On April 7th, this year, the water was tested with a small piece of net 150 feet long, 6 feet deep, with 4" mesh and eighteen fine whitefish varying from 18 to 21" in length and weighing from two to four and a quarter pounds each, were taken. The larger fish showed evidence of having spawned, while the whole contained the nucleus of more ova.

Now what more definite evidence is possible to demonstrate the efficacy of artificial development of eggs?

NEW BRUNSWICK NOTES

Sardine fishing in the Bay of Fundy has so far been light. Most of the Eastport and Lubec canneries have started operations on a limited scale; supplies of sardine herring have not been up to the mark, and tin has been scarce. Connors Bros. of Black's Harbor are doing fairly well, but the factories at St. John and Chamecook have not opened. Maine canners are paying \$10 per hoghead at the weirs. Until the summer schools arrive the price is likely to remain at that figure.

In St. John River the Gaspereaux were late in starting to run owing, the fishermen say, to the cold weather. On some tides both weir and net fishermen made big catches, but as a whole the catch has been small, compared with the same time in other years. Owing to the demand for bait, the price has been good.

WHITE MEATED CANNED SALMON.

Was "WHITE MEATED CANNED SALMON" ever advertised? White is an emblem of purity. If a firm canning white meated salmon should ever advertise it as such they would have all kinds of arguments to help out their campaign. Its good food and nutritious. Who will be the first to try it out. Someone tried "DEEP SEA TROUT" as a brand once, for a light colored canned salmon, and they never were able to fill the orders.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

THE 1919-1920 ORIENTAL SALT HERRING PACK.

Although there is some variance in the figures from different sources as to the amount of dry salted herring packed for the Oriental market, it safe to say that there was close to 25,000 tons packed at both Barclay Sound, and in the Nanaimo district. Probably about 18,000 tons in the Barclay Sound district, and about 7,000 tons in the Nanaimo district.

The first shipment left early in December, and the last about the middle of March. This season the first shipment was made by a white firm, C. O. Julian & Co., and this firm handled a large amount of the pack, although Gosse-Millerd Packing Co., Ltd., and the Wallace Fisheries, Limited handled a considerable quantity. Large runs of herring showed up in practically every district on the coast last season, and the Nanaimo herring were larger than they have been for some years. The majority of them being put up on Barclay Sound resulted in a larger or better fish being packed and good prices were realized. Prices ranged from \$42.00 to \$55.00 per ton.

Inspection and Standardization.

There should be compulsory inspection, and without doubt this would result in standardization of this particular variety of salt fish. There being only one or two that are familiar with all the details of the actual market for these fish, the general idea is that the duly appointed pickled fish inspector would be quite competent to pass upon the quality of the fish. It is to be hoped this question will be thoroughly gone into at the coming convention of the Fisheries Association. If this is not done there will surely be some hold overs shipped to the Orient early in the coming season, and this should not be done, as such fish are not fit for the market. By hold-overs we mean fish that have been salted and are piled up, and then when the time arrives these will be boxed, and shipped to reach the Oriental market when it is here, and then high prices will be obtained. The result will be however that the British Columbia herring will get a black eye, and when the good packs come along the prices will be lower, and suspicion of all salt fish from British Columbia will have arisen. The time to stop this is now, and it is up to those who are most interested in the industry to take some action at the coming convention along

the proper lines. There is a market for 50,000 tons of this variety of cured fish waiting development and by proper methods obtaining at the beginning, right prices should hold, and a reputation for putting up a standard pack would be built up, and the white firms will be able to secure the majority of the market for these fish. There is no reason why the Japanese should have this market, as has been the case in the past. This past season has demonstrated this.

Shipping Facilities and Handling Charges.

The following is respectfully brought to the attention of the Canadian Government Mercantile Marine, as it is believed that their ships may assist in the development of this trade with the Orient, both to the advantage of the shippers, and their own Company.

Freight on shipments to the Orient was paid to American companies for transportation to Seattle, two handling charges paid at Seattle, for transferring from the American carrier to a Japanese steamer. These handling charges were \$1.65 for each handling or a total of \$3.30 per ton. The reason the Japanese steamers got the cargo was that the Japanese government provides a subsidy on shipments by Japanese to Kobe, the idea being to make Kobe the Liverpool of the Pacific. It is also planned by having shipments made to Kobe to draw the Chinese trade to that point thereby creating a large trading center at Kobe. These fish are good deadweight freight, and may be loaded into a hold first. It is up to the Canadian steamship companies to give Canadian shippers a chance to develop this trade, and the Canadian steamship companies are asked to consider this, and if possible take some action before next season's pack is ready to ship. The Canadian Fisheries Association, Vancouver Branch is making some investigations with the idea of assisting in developing this business for the Canadian packers.

NEW LOBSTER FACTORIES

Three new lobster factories are under course of construction at Pomquit Ferry Harbor au Bouche, Blue Rock, owned respectively by George T. King, Fred. Irving & Company, and a Mr. Chase. Lobster fishermen anticipate an excellent season owing to close competition among the packers.

WESTERN PACKERS' NEW BOAT

For Use at Their Northern B. C. Canneries.

Launched in April, the "Kiltuish" is the largest of the fleet of fishing boats and cannery tenders owned by the Western Packers and is certainly a credit to the builders, the Pacific Construction Co., Ltd., of Vancouver. The "Kiltuish" is constructed throughout of specially selected Douglas fir with oak ribs all galvanized fastened. Designed for seaworthiness, carrying capacity and speed, this new boat is certainly built on lines that do credit to the designer and supervising builder, Mr. William Johnson, and the workmanship shows his Tyneside experience.

The principal dimensions of the boat:—100 feet overall, extreme breadth to outside planking 20 ft. 5 in. Beam moulded 20 ft. even. Depth of hold 10 ft. 6 in. Extreme draft loaded, 10 ft. Draft forward loaded, 8 ft. in 5. Draft aft loaded 10 ft. Length of hold, 31 ft. 2 in. There are two 2,000 gallon oil tanks, and fresh water tanks of a capacity of 11 tons.

type Z engine driving to a line shaft mounted on SKEFK ball bearings. This machinery being a low pressure 150 pound compressor used as a stand-by for the main engine in the event of an emergency. The main engine carries its own special compressor. Two gold centrifugal pumps are operated from the jack shaft. One is installed for fire protection and for washing down decks, the other for use as a bilge pump with connections arranged suitable for the purpose of pumping out waterlogged scows by means of outboard attachment. For fire purposes the two pumps are operated in tandem. It is also proposed to operate the electric lighting system from the jack shaft.

The hoisting equipment consists of a Fairbanks-Morse 10 H.P type "Y" semi Diesel engine, the principle of which is the same as the main engine, burning the same fuel with the same economy. This engine is direct geared to a Fairbank-Morse single drum hoist, with extended nigger head, having also sprocket



Pilot house on boat deck and Captains room with Chief Engineer's room on port side, spiral saloon, spare room on starboard side, stateroom off the forecastle, large galley and pantry.

Equipped with two sixteen foot life boats, one of them carrying a three horse power engine.

The company in powering the boat considered the best method based on the idea of economy and results in power obtained. They finally decided upon a Fairbanks-Morse type C-O oil engine for the main engine power plant. This engine is guaranteed to operate a full load at less than a twelfth of a gallon of fuel oil per horse-power per hour, which is approximately twelve gallons per hour. At the present price of fuel oil 10 cents to 11 cents per gallon this means that the boat will be operated on a fuel cost on a twelve hour run of less than \$16.00. The engine room auxiliary machinery is operated by a Fairbanks-Morse 6 H.P.

mounted between niggerhead and the body of the hoist to operate a special anchor hoist. This special anchor hoist was designed and built by the Pacific Construction Co. and has a capacity of from 2,500 to 3,000 pounds: an approximate speed of 100 to 125 feet per minute on a straight line. The "KILTUISH" is also equipped with a special combination propellor designed by L. H. Coolidge of Seattle, which is capable of giving the highest possible efficiency for carrying freight or towing. Her speed will be $9\frac{1}{2}$ knots per hour.

NORTHERN B.C. CANNERIES ALL READY FOR THE SALMON.

All the Northern B.C. Canneries are now in first class shape and finishing touches are being put on preparatory to the appearance of the first salmon.

VANCOUVER WHOLESALE FISH MARKET.

Halibut.—Still scarce, owing to bad weather, and price remains about the same.

Herring.—Fresh fish are off the market. It is reported that pilchards are showing up on the West coast of Vancouver Island.

Carp.—This variety is still coming in, and price is ranging about 10c to 11c per lb.

Cod.—Fresh local caught cod is still to be had in very good quantities. Price 8c to 9c per lb.

Smelt. Off the market.

Smoked Cod Fillets.—This is becoming a popular variety of cured fish, and meets with a ready sale. This applies not only to the local and Canadian market on the prairies, but also to the Australian market. Just now with the Government boats having the cold storage space there is a good chance to get into this new market. The price is 15c per lb. All meat, and no bones or skin.

Salmon.—Fair supply of red and white spring salmon has been arriving recently, and this will improve with the good weather.

Cents
per lb.

Halibut chicken	13
Red Spring Salmon	21
White Spring Salmon	12
Ling Cod (plentiful)	7
Grey Cod (scarce)	5
Red Cod (round)	5 to 6
Oolachans	12
Soles and Brills	6 to 7
Herring	3 to 5
Skate	4
Perch	6

Shell Fish.

Crabs (scarce) (per dozen)	\$1.25 to \$1.50, large \$1.75
ex-large	\$2.75
Shrimps	22 to 25
Clams	4 to 5

Vancouver Prices Smoked and Salt Fish.

Smoked Sable Fish (black cod, whole)	14
Kipperd Sable Fish	20
Fillets Sable Fish	17
Fillets, Cod	15
Smoked Pink Salmon (whole)	20
Kipperd Salmon	18 to 20
Bloaters	7½
Kipperd Herring	10
Eastern Haddie	16
Western Haddie	10
Herring Chicks in bundles of 5 boxes (per box) . .	18
Salt Herring:	
Medium, 900 to 1000 count, 250 lbs. net . .	\$8.50
Medium, 1400 to 1500 count, 250 lbs. net . .	7.50
Large, 200 lbs.	8.50
Large, 100 lbs.	5.25
Large, 50 lbs.	3.25
Salt Sable Fish (Black Cod):	
200 lbs.	\$22.00
100 lbs.	12.00
50 lb. (Kit.)	6.25
Salt Pink Salmon:	
200 lbs.	\$15.50
100 lbs.	8.50
50 lbs.	4.75
Salt Grey Cod:	
50 to 200 lbs., per lb.	10

D. CONNOR, CANNED FISH EXPORTER.

During the time Mr. D. Connor has been engaged in the exporting of canned fish he has built up some valuable connections. Mr. Connor, through his liberal dealings with his correspondents has placed himself in an enviable position, and his business is increasing rapidly. Carefulness in inspecting packs, and seeing that nothing is shipped but the very best brands, his customers realize when placing orders with him that they will get the right goods.

CANNED SALMON MARKET.

During March several thousand cases of chum salmon were disposed of and other sales were pending. The price of sockeyes for 1920 is somewhat of a problem still. Many conjectures are being made. The price will be higher than last year. Reports are that offers of \$18.00 have been made and refused by packers. Some claim they will receive as high as \$20.00 per case. There is no doubt that those packers who have pinks to sell will endeavor to swing them in with sockeyes, and in such cases they will average up the two varieties. It was reported the other day that red springs would go to \$16.00 at the opening. This may be readily believed as the price for raw fish this spring has been as high as 15c per lb., and the catch is not what it was last year to date.

No one can say what the opening prices for raw fish will be, and with the British Government still controlling prices of canned fish in the U. K. at levels which will not allow marketing at prices sufficient to contend with the higher cost of production it is a problem what amount should be planned to pack.

There are rumors that the United States canners are going to curtail the pack of their Alaska plants this year. Many of them planning to use only the cans which they had left from last season, and which they were unable to fill. Another thing that affects them is the amount of chums left over.

There is one thing pretty sure and that is that the lower grades will not be packed in the quantities that would be under normal conditions.

THE SALMON HATCHERY QUESTION.

At the coming convention of the Canadian Fisheries Association, one of the important questions to be discussed is the Hatchery question. A paper will be read at the convention upon the subject, and with the great interest now taken in this most important question it is hoped that some move may be made that will assist in having the government alter its present policy in connection with the sockeye hatcheries.

DOMINION FISHERIES DEPARTMENT CLEARING STREAMS NEAR BELLA COOLA.

The Dominion Fisheries department propose to spend four to five thousand dollars in clearing the Atnarko River near Bella Coola. They now have an engineer and three gangs of men at work. Three years ago, and again last Fall heavy freshets occurred and as a result much damage was done to the spawning grounds and refuse lodged in the river. This will all be cleared up this year.

FISH DEALERS CRICKET CLUB ELECT OFFICERS FOR 1920.

The fish dealers held a meeting recently and elected the following officers: President, Mr. George St. Denis, Captain, W. Cull, vice-president, H. O. Cornett; Sec'y. Treas. F. Westcott. Many of last seasons players will be in the game again this season, and a lively season is expected with the other members of the Wednesday afternoon league.

SEATTLE LOOKING FORWARD TO THE FISHERIES CONVENTION IN VANCOUVER.

Mr. F. E. Payson, Secy. of the Vancouver branch of the Canadian Fisheries Association was in Seattle recently, and found a lively interest among the fraternity in the Puget Sound City regarding the coming Fisheries Association convention, which is to be held in Vancouver on June 3, 4 and 5. There is expected to be a large attendance from South of the Line.

MACHINERY EXHIBIT AT THE CONVENTION.

Strong endeavors are being made to have a fish machinery and equipment exhibit in connection with the coming convention. If this can be arranged the visiting delegates will have a chance to see all the up-to-date machinery on the Pacific Coast. It is to be hoped these arrangements may be made as a great interest will surely result.

CODFISH FLEET ON PUGET SOUND TIED UP ON ACCOUNT OF DEMANDS OF THE UNION.

During the second week in April the Pacific Coast Codfish Co. announces the indefinite tying up of the codfishing schooners Maid of Orleans, Charles R. Wilson and the John A.

The fishermen voted to demand an increased wage scale last Winter, and when the demand was rejected the unions voted to call a strike vote all along the Pacific Coast. The result of this vote was against a strike. The Pacific Coast Company, one of the largest in the North Pacific waters decided that in the face of this instance they could not meet the demand and decided to tie up their fleet.

At a later date it was understood that the union would re-consider their vote, but nothing definite has resulted as yet. Meantime the schooners are tied up. One fully outfitted and the other two partly so.

WHALING SEASON IS HERE.

On April 15th the entire fleet of whaling steamers sailed from Victoria for the whaling grounds. The fleet consisted of the "William Grant", "Orion", "St. Lawrence", "Black", "Brown", and "Green". The "White" left earlier for Tacoma to load powder for the harpoons from which point she will sail for the West Coast of Vancouver Island.

The Consolidated Whaling Corporation will operate the following stations this season; Kynuquot, Rose Harbor and Naden Harbor.

MARK GOSSE INSPECTING CANNED FISH.

Mr. Mark Gosse is now inspecting canned fish for the British Columbia exporters. Mr. Gosse is one of the real old time fish men. He has been on the Pacific Coast for 33 years, and engaged in the fishing business practically the whole of this time. For several years past he has been in charge of salmon canneries. He is the official inspector for the Board of Trade in connection with canned fish of every description.

Mr. Gosse's son, Mr. Fred. A. Gosse is a director and manager of the Harry Hall Co., for Vancouver. This firm is one of the largest canned fish exporters of the Pacific Coast.

TEST BEING MADE TO EXTERMINATE HAIR SEALS OF THE FRASER RIVER.

Using Sturgeon cross lines, two returned veterans, unled the direction of inspector Halladay, of the Dominion Fisheries Dept., are making an effort to exterminate hair seals which infest the mouth of the Fraser, and which are responsible for the loss of thousands of sockeye salmon during a season. The test is being made between Port Mann and Barston Island.

The Veterans Produce Company, Limited, a returned soldier establishment, was recently organized, and a plant is being built on Parkers Island. It is proposed to handle all the hair seals that can be obtained, and utilize the hides, oil and other by-products. If this move proves a success there is no doubt seal hunting will be a profitable undertaking on the Fraser, and will be the saving of many sockeye salmon.

ANOTHER STRONG ARGUMENT WHY AN EMBARGO SHOULD BE PLACED ON THE EXPORT OF RAW SALMON.

Under present rulings, an American built boat, which has been registered in Canada may return to Puget Sound, and lay up for the Winter, and when the salmon season in British Columbia opens again they may come over here and begin operations. This means that Canada gains absolutely nothing, but loses, as these boats are manned by American crews, and employ American fishermen, and the fish are shipped across the line into the United States.

One case is known where there are six of the large seine boats that are now laying up in Puget Sound, and have been since 1918, all under Canadian registry, and it proposed to fish them in British Columbia waters this year.

Why it is the authorities are so dilatory in taking action in placing an embargo on the export of raw salmon when the facts are all against allowing raw products to go out of any country, is a mystery. The benefit derived by a few fishermen does not make up for the harm suffered by Canada and benefit derived by a competing country.

RE-BUILDING OF HAYSPORT.

The Maritime Fisheries, Limited, of which Mr. D. T. Sandison is the managing director, is starting the re-building of the fisheries plant at Haysport, and will install a canning plant. They have purchased the canning equipment of the Liverpool cannery, on the Fraser River, and are removing this to the Haysport plant. This is a two line plant, but only one line will be operated at Haysport for the present. The Company is building thirty columbia river skiffs to operate on the Skeena, in connection with the Haysport cannery. The cold storage plant will be in operation before the Fall, and then independent fishermen will be able to secure bait and ice from Haysport. It is not expected to handle fresh and frozen fish immediately but as soon as condition warrant this branch of the industry will be an important part of this Company's business. The haysport plant will work in conjunction with the Aliford Bay plant of the same company. The Aliford Bay plant is situated on the Queen Charlotte Islands, and with the trackage facilities at the Haysport plant, direct shipments may be made to any point East without freighting to Prince Rupert of Vancouver.

With the acquisition and re-building of the Haysport plant, this Company will become one of the large operating fishing corporations of the Pacific Coast. They will now have facilities for the operating of any branch of the fishing industry, as they have ample facilities for the smoking of fish at Haysport and Aliford Bay, and at Aliford Bay they already have a salting plant, and also a rendering plant.

Mr. Sandison has been a close student of the fishing industry of British Columbia for the past seven or eight years, and in all his undertakings has made no moves without giving same the most careful thought and analysis.

The operation of the Haysport plant will mean a great addition to the operations in the fishing industry in the Northern part of the province, and that section will profit thereby. It is only a short distance from Prince Rupert, and local merchants will have the benefit of the additional employees that will be close to their doors.

The building crew left for the North on April 12th, and operations will be rushed to have everything ready for the canning season, when it opens.

FIRE DESTROYS THE INVERNESS CANNERY.

Fanned by a strong wind, a fire which began in the canning department of the Inverness Cannery completely destroyed the plant on April 11th. Many fishing boats, gear, groceries and supplies were destroyed. It is doubtful if time will allow the re-building of the plant in season for this year's pack. The Inverness cannery was the property of Messrs. Todd & Sons of Victoria, and is only one of the several plants owned by this firm. The cannery was situated near the mouth of the Skeena River.

MILD CURE PRICES LOOK GOOD.

It looks like, 30c opening price on mild cured spring salmon this year. If this is so, there will surely be something worth while in handling this particular variety, and it is too bad that the majority of this pack will all be handled through the Seattle houses. Canadians only receiving the benefit of the selling price. Practically all this is handled by American bottoms, and the tierces are practically all made in Seattle or Tacoma. Think it over.

BAD WEATHER ON THE PACIFIC COAST DURING MARCH AND FIRST PART OF APRIL.

All during the month of March and first part of April the weather on the Pacific Coast has interfered with fishing operations. On the West coast of Vancouver Island the salmon fishing has been very uncertain. At this season of the year much trolling for salmon is done in this section, but the catches have not been up to last year's catches. The halibut fishermen have also had poor luck for the same reason. Halibut boats have been out over twenty days, and brought in very poor catches.

The result has been a scarcity of all varieites.

RESTRICTIONS ON BRITISH COLUMBIA TRAPS, NONE ON WASHINGTON.

In comparing regulations applying to salmon trap operations it is found that where British Columbia trap owners have to leave their traps open so that the fish may pass through at week ends, the regulation applying to traps on the Washington side do not compel them to have them open. The matter is being taken up at Ottawa with the idea of having this matter rectified. Under the treaty agreement that condition was to apply to both sides of the line. As the United States has not signed the agreement, but as the British Columbia owners are complying with the agreement it is nothing more than fair that the Puget Sound owners should do the same thing.

DELEGATES LEAVE VANCOUVER FOR OTTAWA TO ASK FOR FISHERIES COMMISSIONERS FOR BRITISH COLUMBIA.

Mr. Henry Doyle, representing the British Columbia Salmon Cannery Association, and Mr. J. J. Coughlan, representing the Board of Trade of Vancouver, left Vancouver on April 22 for Ottawa to ask that a Board of Fishery Commissioners be appointed to act in an advisory capacity for British Columbia. This delegation is the result of several meetings of business men and fishing interests who advocate a fishery board to assist in the administering of the fisheries of British Columbia. The original recommendation of the Special Committee appointed by the meeting, was that a commission to consist of representatives from the Board of Trade, the Fishing interests, the fishermen's Association, the Provincial Government, The Canadian Manufacturers Association, B. C. Manufacturers Association, (it is barely possible they forgot to name some other organizations). Now a commission consisting of the number represented by this list of organizations would be so cumbersome that it would be absolutely useless, and many of those on the board would have to be educated in the fish business before they would have any conception of what would be good or bad regulations. We do not believe that the delegates appointed will ask for any such a board of commissioners but will ask for one consisting of from 3 to 5 members.

The Canadian Fisheries Association asked for such a board in May 1919, when they had a conference representing all Canada. They then asked that boards of this description be appointed for the Pacific Coast, the Great Lakes, and the Atlantic Coast. At that time the Minister of Fisheries was very favorably impressed, and without doubt some thing will be done in this connection.

W. A. WARD & CO. MAKES QUICK TIME IN SHIPPING THIS LOT OF CANNED SALMON

Sixty-nine hours for the unpacking, re-labelling and shipping of 240,000 cans of canned salmon, is the record made by W. A. Ward & Co. on a recent shipment. Receiving notice that the shipment of five thousand cases of chum salmon which was booked to go on a certain boat was to be shipped on another boat that was sailing several days earlier, and that this shipment was to be placed in the hold first, the firm had to do some tall hustling. Beginning at noon on Friday they finished the job at 9 a.m. on the following Monday, working night and day to finish. If one stops to analyse just what this job meant they can imagine the different moves in the undertaking. Perhaps it will be interesting to illustrate what it means to re-label a case of salmon. First the nails in all the covers have to be drawn out so that covers may be re-placed without being broken. Then every can must be taken out, and if labels are already on these are taken off, and new labels put on. If none are on the cans then they are simply labelled. Next the cans are re-placed in the boxes, the cover nailed on, and if for export shipment, as was the case in this instance, the boxes are strapped with wire strapping. A shipment of this size consists of 5,000 cases with 48 cans in each case.

By re-labelling it is meant that many times the packer has already labelled his cans of fish, and the purchaser wishes his own label to appear on the cans, and in that case it means the cans must be re-labelled. It is the practice in most instances where canned fish are being sold for export to leave the cans unlabelled for this reason, and then when they are sold the purchaser can have his label placed on them.

TO VISIT HATCHERIES

Superintendent of Fish Culture Leaves for Coast

Ottawa, May 9.—J. A. Rodd, Superintendent of Fish Culture, has left for the Pacific Coast to visit the fish hatcheries operated there by the Department of Naval Service. En route he will visit the hatcheries at which fresh water species are being propagated. He will be in the West for a month or six weeks, and while on the Coast will attend the annual convention of the Canadian Fisheries Association.

Atlantic salmon eggs undergoing incubation in the fish hatcheries of the Maritime Provinces, operated by the Fisheries Branch of the Naval Service Department are exceptionally fine this year, and the outlook is for a record hatch and distribution, according to a report by S. J. Walker, inspector of hatcheries.

1920 FISHERY REGULATIONS TO BE THOROUGHLY ENFORCED.

Chief Inspector of Fisheries Cunningham and his deputies are taking every precaution to enforce the 1920 fishery regulations in British Columbia. With their own equipment of 21 boats, the department will have an additional fleet of from 25 to 30 boats, which will assist in enforcing the regulations. This means that the entire coast will be thoroughly patrolled and every district will be carefully watched for the infringement of the new regulations. Special attention will be given to prevention of fishing at or near mouths of creeks, or streams where salmon enter to reach their spawning grounds.

DUTY WILL NOT BE REFUNDED TO OWNERS OF AMERICAN FISHING BOATS ON RETURN FROM FISHING IN CANADIAN WATERS.

It has been the custom, during the war, to return the amount of duty elvied on American fishing boats, which came into British Columbia waters to fish for salmon, and then returned to the United States after the season was over. Upon entering Canada, American boats were compelled to put up a bond, amounting the amount of the duty on the boat, with the understanding that they would return to the American side within a certain period, and the amount of the bond was returned to the owner if this agreement was carried out. Upon the declaration of peace this custom was annulled. This means that American boats wishing to fish in Canadian waters for salmon this year will have to pay duty on their boats and gear, and this duty will not be returned. This is an important ruling as it will mean that there will not be such incentive for holders of seine licenses to engage seine boats from the American side to come into British Columbia waters and operate under these licenses.

"CAPTURE THE CANADIAN MARKET."

The following editorial from the Vancouver Daily Sun is in line with what your correspondent has advocated for some time past, and without any doubt that with properly distributed propaganda the Canadian public would consume large quantities of the lower priced, and nutritious varieties of salmon than they do at present:

"The advice to British Columbia Canneries to curtail this season's pack of salmon has resulted from the temporary loss of the British market, due to the accumulation there of wat stocks. But is this the proper way to meet the difficulty? A serious situation is created and the way out of it is to find new markets for the stocks Britain cannot absorb.

The natural market for British Columbia canned salmon lies in Canada. The so-called "cheaper grades" are not now extensively consumed here. But the day of the sockeye is nearly done and the consuming public has only to be convinced of the quality of the B. C. white salmon in order to purchase it as readily as the other varieties.

To capture the Canadian market is, in these circumstances, the task of the salmon canneries. A wisely conceived and energetically conducted advertising campaign is needed to recommend to Canadian consumers a product which is in every way as suitable to the Canadian market as to those by which it has hitherto been absorbed."

There is only one objection to the above editorial, and that is the words "cheaper grades." It is better to use the words "lower grades." By eliminating the word "cheaper" and using the words "low priced" tends to attract prospective purchasers without bringing to mind the thought that "cheap" tends to connect with poorer quality goods.

WHITEFISH TO BE CANNED.

It is reported that a company will undertake to can whitefish in Alberta this year. An attempt was made to operate such a plant a while ago, but did not prove successful. Perhaps new methods will be used this time which will turn out a satisfactory product.

Labrador Fisheries

QUEBEC OFFICES
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Operating Plant and Cold Storage
SEVEN ISLANDS, QUE.

*Operating Fisheries North
Shore Gulf of St. Lawrence*

*Producers and Distributors
of*

Famous Moisie River Salmon

ORDERS SOLICITED

*Car Loads and Less than
Car Load Lots*

INSPECTION OF PICKLED FISH.

It is to be hoped that the pickled fish inspection act is passed at this session of parliament. British Columbia has had a past experience in pickled herring, and with a compulsory inspection act it will be impossible to have another such experience. The past experience was costly, and a year ago another experience resulted, not to such a large extent as in the Scotch cure pack, but it will take some little time to eradicate the feeling that the herring packed here were not properly inspected. There is no doubt that a first class pack of pickled herring can be packed in British Columbia. The size may not be as large as the Alaska herring, but they will compare favorably with the Holland herring, and there is a large market on the prairies for such a pack, if put in small packages, and properly marketed.

IS THERE A SALT SALMON MARKET IN AUSTRALIA?

It is rumored that there are some sample shipments of salt salmon to be made to Australia by U. S. firms. With cold storage facilities obtainable on the new Government steamers, Canadian firms should also try this out, and specify in making these shipments that they are **Canadian Packed Goods**. Barrels of not over 100 lbs. capacity should be used.

KILDONAN PLANT TO CLOSE DOWN.

The Wallace Fisheries, Limited, will not operate their Kildonan Cannery, on the West Coast of Vancouver Island this year, as they claim they will not be able to compete with the Americans who come over to buy fish, and are able to pay higher prices, on account of a protective tariff. Last year they expended nearly \$400,000.00 in wages and supplies during their operations. This is another instance where an embargo on the export raw salmon would work to the benefit of Canadian industries.

NEWFOUNDLAND FISHERIES DEPARTMENT TO BE REORGANIZED.

In the speech of the opening of the Newfoundland parliament the Premier stated in part:—

The Department of Marine and Fisheries which may be considered one of the most important Departments of the Administration, will be re-organized; an information Bureau and Scientific Research Department will be established; a commission will be appointed to put into operation laws for the standardization of fish and the improvement thereof. Trade Commission and other agents will be appointed from time to time until Newfoundland is suitably represented in all its principal fish markets. Legislation will be introduced to provide for the enforcement of such regulations as my Ministers may consider necessary to protect the interests in foreign countries of those who ship fish to the foreign markets.

WHAT DOES IT MEAN? F. R. 2-L, 1891

A white spring salmon bearing the mark "F. R. 2-L, 1891" in a circle was caught by E. S. Hicks of Lewis Channell, B.C., the first part of May. Chief Inspector Cunningham, of the Dominion Fisheries knows nothing about the marking of the salmon, and has communicated Mr. L. H. Darwin, fisheries Commissioner of Washington, at Seattle, who possibly might know about the marking. A twenty-nine year old salmon would surely be some record.

ALASKA CANNERY OUTFITS START NORTH.

During the week ending April 10th several of the Alaska Cannery outfits got away for the North, and others were to follow a few days later. It is reported that the canneries are not preparing for as heavy a pack this year as last, owing to there being a considerable amount of piks and chums left on hand from the 1919 pack.

IN MARKETING CANNED FISH, SELL THE QUANTITY WHENEVER POSSIBLE.—SELL IT BY THE CASE.

(F. E. PAYSON, Sec'y. Vancouver Branch, Canadian Fisheries Association.)

Volume is what counts in the long run, when marketing any commodity.

Large turnovers at smaller profits will lead to larger profits at the end of the year. Another thing that enters into this marketing problem is that if you begin to think of marketing one line in large quantities, you will ultimately begin to think of other lines in the same way. Therefore if you begin to talk canned fish by the case you will begin to talk of selling soap by the case, and canned milk by the case, as well as other kinds of merchandise. It pays to think in case lots rather than in single can quantities. Get the habit and talk canned fish by case lots. It is wonderful how an idea like this will grow and before you know it your volume of sales will surprise you. Mr. Wholesaler are you talking this to your retail customers?

THE FISH INSPECTION ACT

Ottawa, May 20 (Special).—The fight to keep the fish Inspection act amendments was revived today and the Government supporters scored a goal in this see-saw affair by rallying to the support of the committee chairman, E. K. Spinney.

Last week it was concluded that the amendments to the Inspection Act were killed and Liberal members of the select committee of the House expressed surprised when they were again called to consider it. However, many new faces appeared at this morning's meeting, some of them the faces of committee members who had not previously attended this session. Thus the line-up was changed greatly.

The fight came to a head this morning, and after being over-ruled by the chairman in their contention that the bill was dead, the Liberal members, including D. D. McKenzie, Wm. Duff, J. H. Sinclair, and others, withdrew from the meeting.

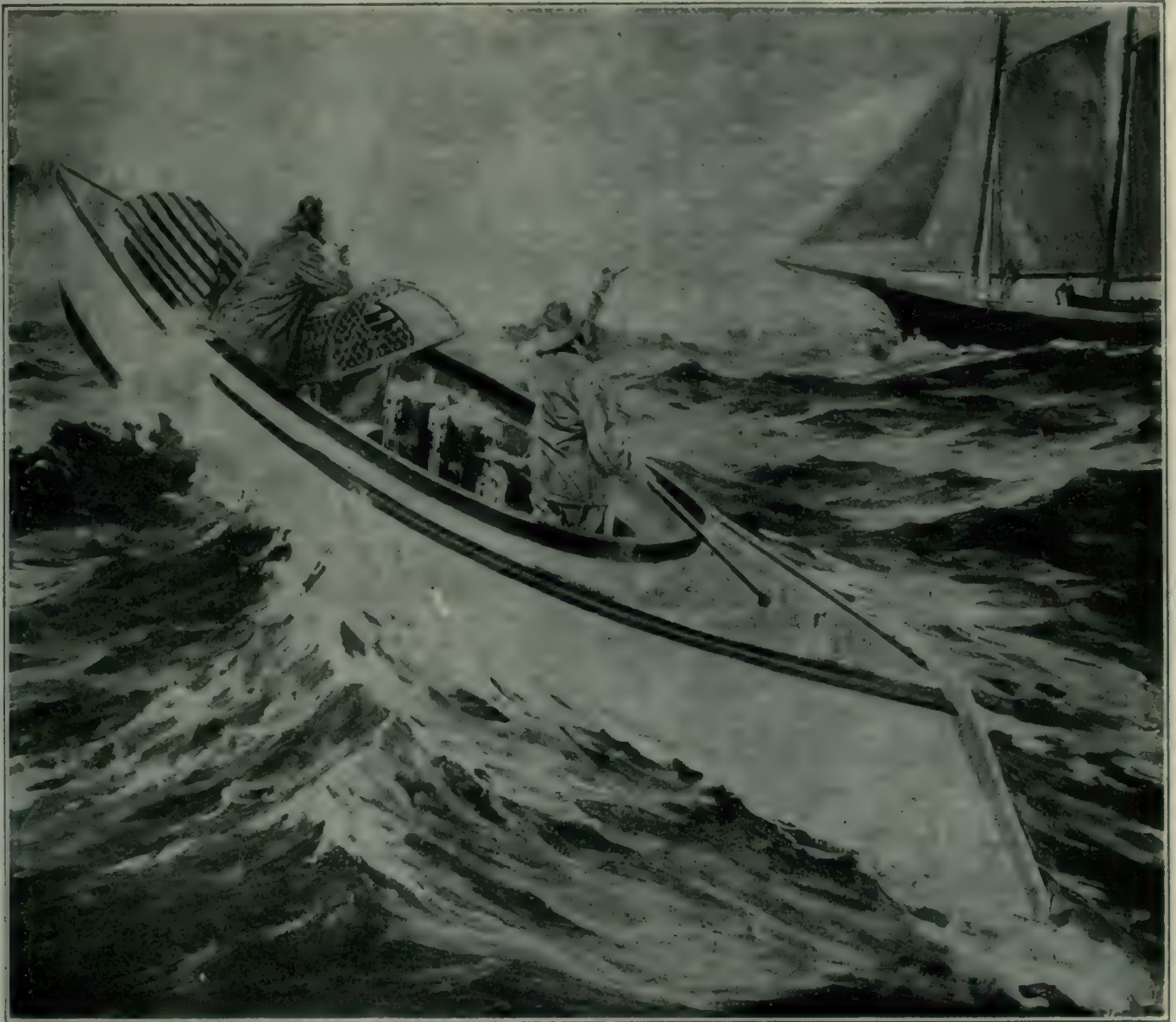
Mr. McKenzie protested that he had excellent authority for his contention that the bill was killed.

The chairman held otherwise and said he was advised the bill could again be considered.

Messrs. McKenzie and Duff continued their objections, but the bill proceeded so they carried out a threat to leave the committee.

Then, with some minor changes the bill was adopted. Unionist members took the stand that the bill should not be thrown aside because of a technically and certainly not without a hearing.

The entire matter is sure of an airing when the matter again comes up in the House, where the Liberals say they will continue their fight on the basis, chiefly, that the Act, as it stands, cannot be enforced without an army of inspectors scattered all through the country.



Upon request, a Calender will be mailed having the above picture reproduced in colors.

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FISH TRAPS ON VANCOUVER ISLAND HAVE THE FIRST LIFT ON APRIL 29th.

The first week in May was set for the lifting of the Vancouver Island fish traps this season, and considerable interest is always aroused among those interested at this time, as a great deal of zest is added to the event by the bookings that are made as to the amount of fish taken in the first lift.

MACKEREL SCOUT REPORTING SCHOOLS

The Canadian Government steamer "Hochelega," which was consigned this spring to set out on the Atlantic coast in search of mackerel schools, reported on May 11th that a small school had been located northeast of Seal Island. As far as could be ascertained the fish are coming from the south and working north and northeast with moderate winds and heavy south swell prevailing. This is the first season's mackerel, and fishermen are already on the grounds.

Saskatoon, Sask.—Stock is being sold here of the newly organized Gregory Tire and Rubber Co., of Coquitlam, B.C., which has patents on a new rubber, which, it is claimed, will revolutionize the rubber industry. Waste from fish packing factories, and dog-fish caught in the Pacific will, under the new process, be utilized in the manufacture of rubber goods, and the first unit of the factory has been erected. Thirty per cent of rubber will be used in the compound instead of the usual 70 per cent and there is said to be no limit to what can be done with the finished product.

CANNED FISH MARKET.

Canners contend that it will be impossible to make a lower price on sockeyes this season than \$20.00 per case. There are two very strong arguments brought forward which demonstrates that it will be impossible to come out whole unless this year's pack of sockeyes bring a price near the \$20.00 mark. First there is the increased cost in all kinds of materials, and wages and food supplies are much higher. The canners have never received the increased prices for their products that other industries have. Second, is the fact that the demand for cheaper grades has fallen off, and a decreased output of these grades will mean a higher overhead to apply to the higher priced grades. The fact that the low grade varieties are put up at the same canneries as are the higher priced grades, and with the same number of employees, demonstrates this point.

PINKS are being talked at \$8.50 for talls, but there is no set price at present.

RED SPRINGS have been selling at \$17.50 for halves and there are indications that this may be improved upon.

HERRING. The canned herring market is fairly well cleaned up.

CHUMS. Sales are being made of this variety right along. The quantities are not large but still they are moving.

BETTER WEATHER ON THE WEST COAST OF VANCOUVER ISLAND.

Although the weather is improving on the West Coast of Vancouver Island, the spring salmon have not begun to show up in any large quantities. It is reported that Pilehards are beginning to run. If this is so a quantity of this variety may be canned by one or two canneries.

WILL INSPECT PACIFIC COAST HATCHERIES

Mr. J. Rodd, Superintendent of Fish Culture, has left for the Pacific Coast, to visit the fish hatcheries there operated by the Fisheries Branch, Department of the Naval Service. En route, he will also visit the hatcheries at which fresh water species are being propagated.

Conditions in the hatcheries on the Pacific Coast were never better. They are all working to capacity, and are fully stocked with eggs, and indications are that the distribution of fry this year will far surpass previous records. Conditions in the Fraser River are said to be excellent. In the Prairie Provinces bad weather conditions prevented as good a collection of eggs as on the Coast, but nevertheless, distribution will be heavy.

Mr. Rodd will be in the West about a month or six weeks, and while on the Coast he will attend the Canadian Fisheries Association, June 3, 4, and 5.

PAYMENT OF CUSTOM DUTIES IN BRAZIL.

The proportion (at present 55 per cent) of sums due to the Brazilian customs in respect of import duties which is payable in gold, is in practice payable in what are known as gold "vales."

H.M. commercial secretary at Rio de Janeiro reports that the Minister of Finance has issued a ruling to the effect that as the rate of exchange on London does not express the relation between English gold currency and Brazilian paper currency, and as the proportion of the customs duties to be paid in gold (55 per cent) should be collected either in gold or in its exact equivalent in paper currency, the sale price of the "vales" shall be calculated, as from 8th December last, on the basis of the New York rate of exchange instead of on the sterling rate. The gold "vales" must be purchased in exchange for paper at the Banco de Brazil, which every week fixes the rate in paper at which it will sell these "vales" in accordance with the average exchange rate of New York on Rio de Janeiro for the preceding week. The Banco de Brazil has the monopoly for the issue of the gold "vales" to cover customs duties.

The measure was introduced in order to increase the Federal customs revenue, and the difference of exchange thus realized involves an increase of from about 20 per cent to 22 per cent on the proportion of duties payable in gold, or an increase in the total duty of about 12 per cent.—British Board of Trade Journal.

LOW PRICES FOR DRIED FISH

Why is it that with the value of all other kinds of food stuffs soaring, there should be a decline in the price of fish? asks the Maritime Merchant. One reason, it thinks is that the consumption of dried fish is confined to certain countries, and some of these countries in Europe have been hard hit by the war. Other countries with a colored population which have in the past been large consumers of dried fish are enjoying a new prosperity, with the result that the people have developed an appetite for other things than dried fish. Again the fishing industry of the world is being more rapidly restored than other industries.

At present dried fish for export is worth about three dollars less than last year, and it is likely the spring catch of the bank fleet will not bring more than \$12 ex vessel—not a very profitable price with costs of outfitting as high as at present.



Protect Your Business

—with the Reliable Ignition Unit. It is the logical unit for all marine purposes, in every kind of weather. The Reliable Ignition Unit will assure you a quick trip to the fishing grounds, a quick trip back to market, and a safer trip both ways.

The Reliable Ignition Unit is water-proof. The well-known Reliable dry cells of which it is made are set in pitch and cased in a strong caulked box. The Reliable Ignition Unit is built to keep all moisture out.

The Reliable Ignition Unit also gives you longer service. Each of the Reliable dry cells are fitted with the Big Brass Cap, which puts every bit of energy to useful and timely work.

Put an extra Reliable Ignition Unit No. 8216 and a Reliable Battery or two in your locker to protect you and your business in emergencies. Add a Reliable Flashlight, too. You'll find it a useful and handy light many times each trip.

For sale by all good dealers.

RELIABLE
TRADE MARK

"Lively and Lasting"

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SPECIALIZE
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VARNISHED
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PILCHARD
LABELS

THE
B.C. PRINTING & LITHO. LTD.
VANCOUVER, B.C. CANADA.

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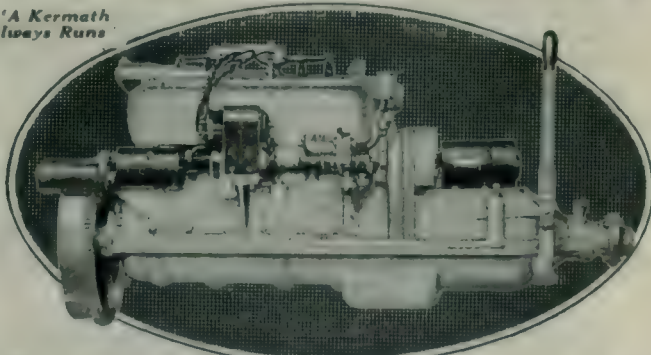
"America's Standard Four Cycle Engine."
YOU CAN FIT 1920 KERMATH IMPROVEMENTS INTO A
1912 KERMATH ENGINE.

The Kermath has been standardized ever since it was built. You can fit any 1920 Kermath part into any Kermath engine of any date as far back as 1912. Think what this means to the customer.

But when you want a new part you want it quickly. The Kermath dealer can give it to you promptly. Because of Kermath standardization it is easy for him to keep a complete set of parts in stock.

That is one reason why Kermath representatives are always to be found among the better dealers, and why Kermath owners have such a friendly feeling towards Kermath service. Write Dept. "N" for the Kermath booklet—it will interest you immensely whether you own a boat now or consider buying one.

"A Kermath
Always Runs"



KERMATH Mfg Co.
DETROIT MICHIGAN.

BRITISH RETAIL OPINION ON FISH IMPORTS FROM CANADA.

In its March issue the Canadian Export Pioneer, published in London, concluded an interesting series of interviews with leading British buyers upon the quality and success of Canadian products in British markets. Representatives of the five greatest London departmental stores gave their opinions freely upon their Canadian purchases, and their proximity to the ultimate consumer lent excellent direction to their criticism. The following concerns, buyers of many millions of Canadian manufactures yearly, were interviewed:—Army and Navy Stores, Harrods, Civil Service Co-operative Association, William Whiteley, Ltd., Selfridges.

Canned Fish.—In canned fish there is a considerable difference of opinion. Fraser River salmon was regarded by all as a standard article, but the high price has hurt the market considerably. The Civil Service Co-operative Association praised chicken haddie and codfish from Nova Scotia very highly. In the general opinion, Canadian sardines could not compete with the European product either in quality of fish or in handling.

FISHERIES CONVENTION AT VANCOUVER IN THE HANDS OF EFFICIENT CHAIRMEN

When Mr. A. L. Hager, chairman of the convention of the Canadian Fisheries Association, to be held in Vancouver, June 3rd, 4th and 5th, announced, at a recent meeting of the Vancouver branch, the names of the chairmen of the different committees, everyone decided he had used good judgment. Every Chairman selected is a worker, and visiting delegates may rest assured that each feature of the convention details will be well attended to. The following are the names of the different chairmen:—

Reception Committee, F. E. Burke, Manager, Wallace Fisheries, Limited.

Transportation Committee, Edward Lipsett, Fishing Gear Dealer.

Information, Victor May, Canadian Fishing Co., Limited.

Hotel and Registration, F. A. Gosse, Manager, Harry Hall & Co.

Entertainment Committee, J. S. Eckman, Asst. Mgr. Canadian Fishing Company.

Banquet and Speakers, F. W. Wallace, National Secretary, Canadian Fisheries Association.

Program Committee, F. E. Burke, Wallace Fisheries, Limited.

Music and Special features, H. B. Bell-Irving, H. Bell-Irving & Company.

Publicity, F. E. Payson, Secretary, Vancouver Branch Canadian Fisheries Assn.

Golf Committee, George Buttimer, R. V. Winch & Co. Chairwoman Ladies Committee, Mrs. F. E. Burke.

EQUIPMENT FOR HAYSPORT CANNERY GOES NORTH.

Mr. D. T. Sandison, manager of Maritime Fisheries, Limited, has been busy recently getting the machinery away for the new cannery at their Haysport plant. This went North from the Liverpool cannery during the last week in April.

PRINCE RUPERT HERRING FISHERY

A report from Prince Rupert, early in April, states that the herring have acted very strangely this season, and that the two outfits that are fishing, have not been able to secure catches as easily as formerly. The fish have remained deep, and are just beginning to come into shoal water, almost ripe.

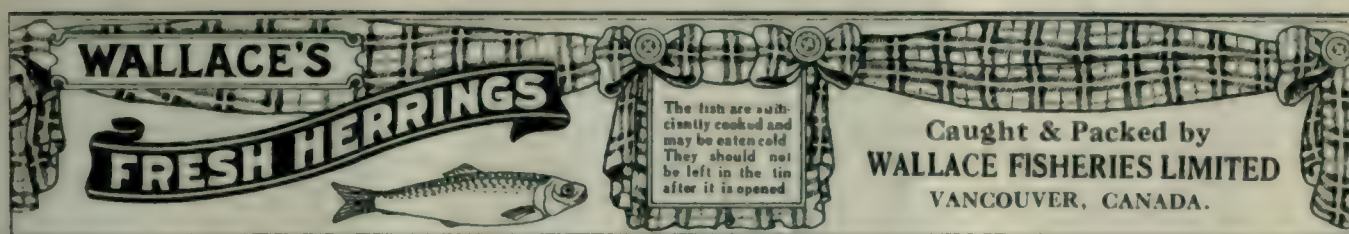
CHAIRMAN HAGER PLEASED WITH RESULTS OF FINANCE COMMITTEES EFFORTS, AND GOOD FEELING SHOWN BY ALLIED INDUSTRIES.

Mr. A. L. Hager, convention chairman expressed himself well pleased at the response of the industry and allied industries to the appeals made by the finance committee. Not only have the cash contributions toward the expenses of the convention been very liberal, but offers toward the entertainment of the visiting delegates have been most kind. A steamship company offers the use of a steamer for an entire day. A nearby sawmill (one of the largest) offers to saw special logs, and arrange for a special inspection of its mill while the convention is in session. This show of hospitality will give visiting delegates an idea of the glad hand of welcome that is extended to them by Vancouver.

CHAIRMAN BURKE OF THE VANCOUVER BRANCH STRIKES KEY NOTE OF FELLOWSHIP.

At a recent meeting of the Vancouver branch of the Canadian Fisheries Association, Mr. F. E. Burke, chairman of the Vancouver Branch struck the Key note of the fellowship idea of the annual conventions of the association when he stated that the personal element should play a strong part in the getting together of those who have any part in the handling of the product of this great industry. Every effort should be put forth to get the men from the East, who had perhaps been handling canned salmon for years and transacting business with packers on the Pacific Coast, but who had never seen each other, to come out to the convention, and get personally acquainted. This would result in a closer bond than mere business, and would bring untold good to all concerned.

In the Public Accounts Committee of the Ontario Legislature the interesting fact was brought out that the people of Ontario, despite the high cost of living, are not using enough Government-supplied fish at "cost" to keep the fishermen on the northern Lakes up to the limit of their contracts and that a substantial cut had to be made in the amount being taken from Lake Nipigon as a result. The statement was made by Mr. McDonald, Deputy Minister of Game and Fisheries, who was giving evidence before the committee. Mr. McDonald was being questioned by R. R. Hall of Parry Sound who had spoken of the difficulty people living near the source of the supply had had in getting fish and criticised the large shipments of fish to the United States. The Deputy Minister stated that despite the low price on the Government white fish, trout and pickerel of the highest quality, and all the advertising propaganda carried out, the demand was less than the supply. If the export market were shut off, it was stated, most of the fishermen in Ontario would be out of business within a month.



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That he can sell a case of
WALLACE'S CANNED HERRING

where he sells a can. A man buys a box of apples. Why not a case of canned herring? It will keep indefinitely.

TRY IT.

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BENTLEYS
ARMSBYS

Salmon
Pilchards

CANNED FISH

Herring
Clams

OUR SPECIALTY ACTING AS BUYER'S CANADIAN REPRESENTATIVES
C. I. F. Prices Quoted

TALKING STRIKES ON COAST STEAMERS IN B.C.

If there should be a strike, as is rumoured, on the British Columbia coast boats right now, it would cause some trouble, as there are large quantities of supplies going north at the present time destined for the canneries.

ALBERTA FISHERIES

Three new companies will be operating this season on Lesser Slave Lake, viz.: F. Ballach at Wagner, A. Jones Company, at Faust, and Messrs. Miller and Madden at Drift Pile Reserve. There is considerable more ice stored at the lake this season than in former years, there being a total of possibly 4,000 tons.

S. RAMIREZ & CO., *Fish Brokers*

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New York Agents: S. RAMIREZ & CO.
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MINARD'S
"KING OF PAIN"
LINIMENT

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Crossley Net Lifting Machines

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Entirely Automatic with 9 H.P. Engine

"The Machines That Have No Equal"

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Control Your Boats from Shore by Wireless Telephone!

Instant Word-of-Mouth Communication Any Time—Any Weather, Ship to Ship or Shore to Ship.

The DeForest Radiophone (Wireless Telephone) is practical, successful apparatus now in operation in many places. Enables you to talk instantly with boats miles away; to control your fleet; prevent wrecks and losses in the catch. The apparatus is simple and can be placed on any vessel having electricity or gas engine; and mounted in weather-proof cabinets. No trained operators needed—just talk on the telephone. Gives clear, distinct conversation over land or water, thru fog or storm. Varying range for all requirements. Inexpensive to buy; easy to install, and simple to operate.

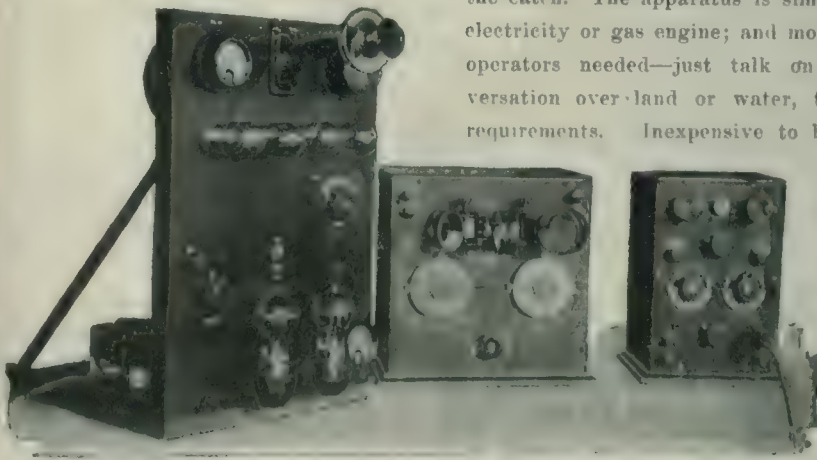
Saves its cost the first month. The Radiophone way is the modern way. Find out more about it right away!

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DeForest Radiophone (Wireless Telephone), Transmitting and Receiving Station. A simple type of DeForest Apparatus, complete Station as shown here. Reliable, efficient and modern. Special installations can be made to meet individual requirements.

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119 Youville Square, - MONTREAL

*I am in the Market at all times to Buy or Sell on
Commission, Fresh, Frozen Smoked and Salt Sea
and Lake Fish in Carload Lots or less.*

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Haddies, Fillets, Kippers,
Bloaters, Scotch Cured Herring

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Fresh, Frozen and Salt
Sea Fish

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Wabakin Fish Co., Montreal, Que.

A. W. Fader, Canso, N.S.

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*Especially
Constructed
for
FISHERMEN*



The All White
AND
White Sole Boots

Manufactured by

The Independent Rubber Co., Limited,
Merritton, Ontario

FISHERIES



BRANCH

To All Commercially Interested In The Fishing Industry

- ¶ Are you earnestly doing your very best for the development of the fisheries?
- ¶ Are you a believer in big profits, at any cost, to the industry?
- ¶ Or, have you always in mind that it is a national property, of which you are merely a custodian?
- ¶ Relatively, the public is in the position of a minor who does not realize the value of a property bequeathed to him.
- ¶ Are you as conscientious and scrupulous in the people's interests as you would be as the executor of a private estate?
- ¶ If not, why not?

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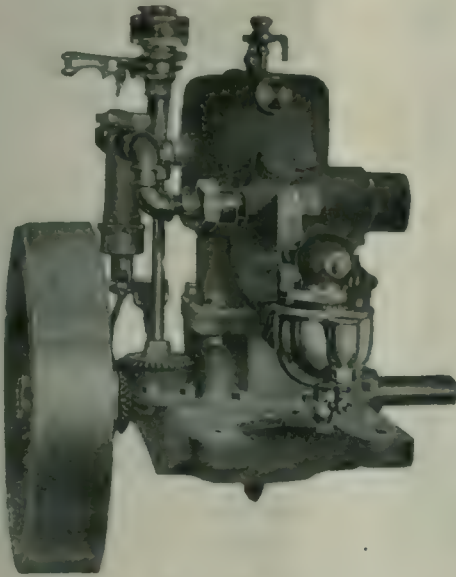
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The attention of dealers who receive their fresh fish from Portland and other foreign sources is directed to the exceptional opportunities of obtaining their supply from the Baie des Chaleurs and the North Shore of the St. Lawrence, to their own advantage and that of their customers, and to the benefit of the fishermen of the Province of Quebec.

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**The Minister of
Colonization, Mines and Fisheries
Of the Province of Quebec**

IMPERIAL MOTORS



5 H.P. Model "A"

When you buy an Imperial you are getting an engine backed by years of service so satisfactory that Imperial Motors are the standard fishing boat engines of Eastern Canada and are to be found in every fishing district in Canada and Newfoundland. They are the best that money, skill and experience can produce.

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Complete shipping weight, with outfit	420 "
Diameter of Propeller, 2-blade	18 inches
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Shaft diameter	1 inch
Shaft length	5 feet

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P. E. I.

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Canada

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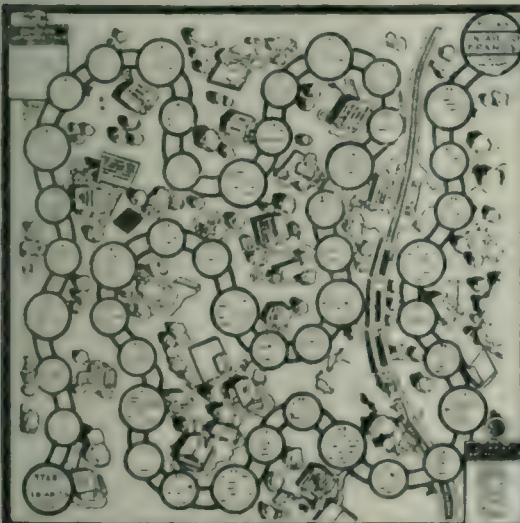
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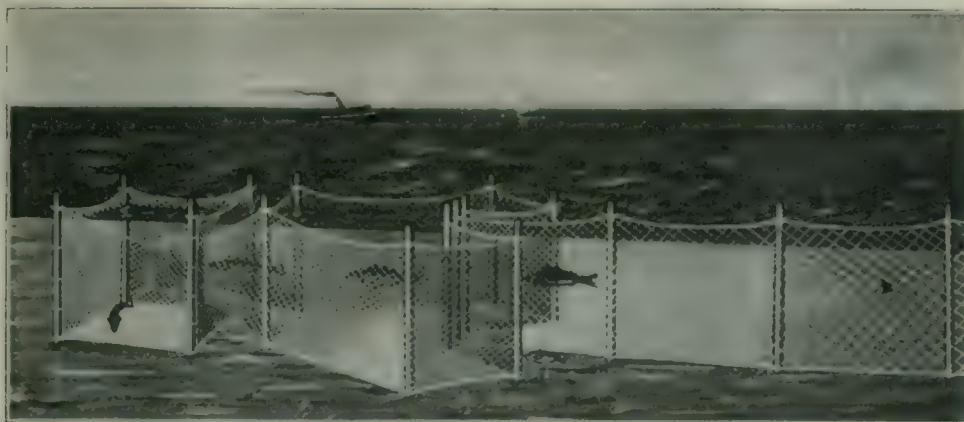
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POUND NETS,

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HAUL SEINES,

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As we smoke only the
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duct should be of par-
ticular interest to dis-
criminating buyers.
Fish taken right out
of the water at our
plant at Liverpool and
smoked in a thorough-
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house.

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PACKERS AND CANNERS,

BLACK'S HARBOUR,
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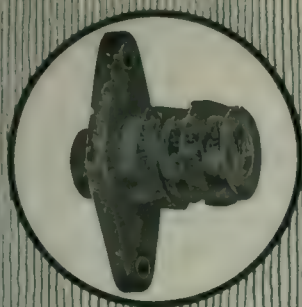
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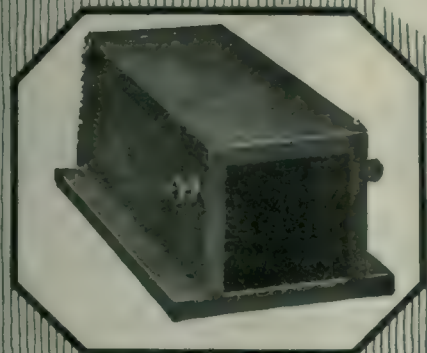


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Largest Packers and Curers of
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FISH AND FISH PRODUCTS

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MEDICINAL CODLIVER OIL



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Nova Scotia's Enormous Fishery Resources

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Fish and Fish Products

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If You Have Capital To Invest—

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Also IVORY BRAND of Boneless Codfish put up in
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*Whether you want to Buy, Sell or Talk FISH, communicate with us
It will always pay and interest you*

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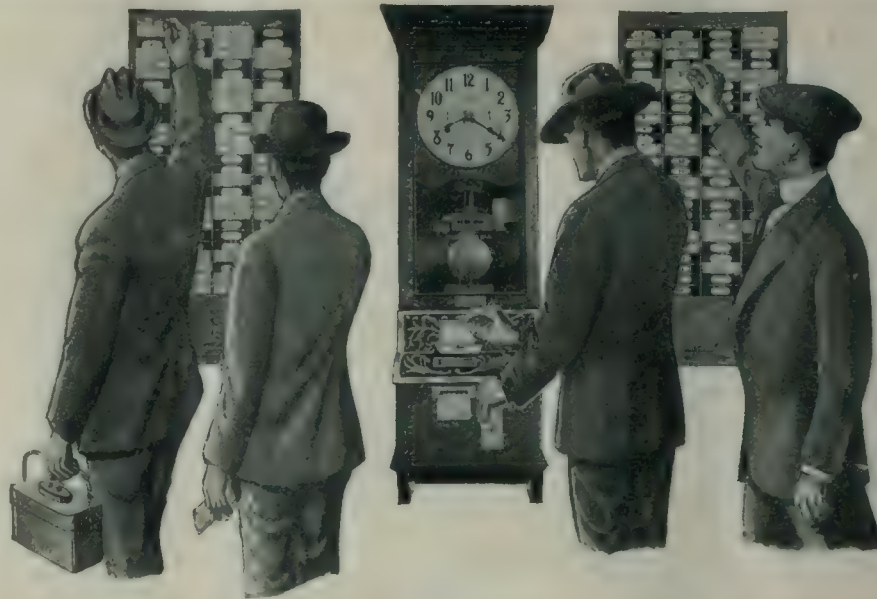
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50,000 dealers sell
Goodrich Foot-
wear. There is a
style for every kind
of labor and sport.



Goodrich

HI-PRESS
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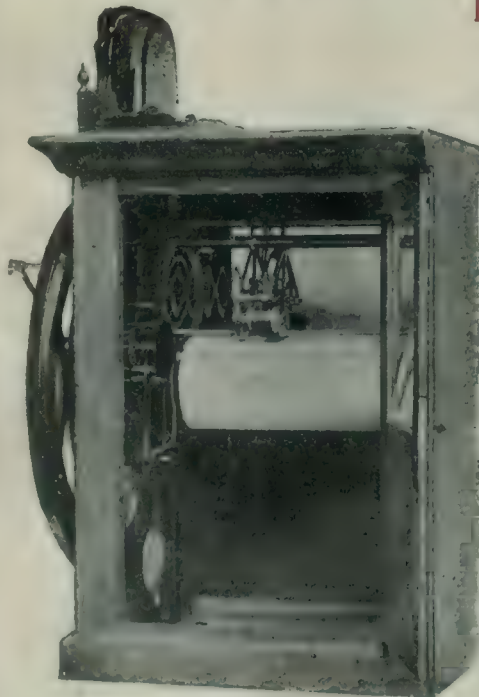
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An honest policy—an honest service—an honest product has built up our great success over 30 years.

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Principal Cities

(Also makers of Hollerith Electric Tabulators and Dayton Computing Scales)



DRAWN BY F. W. WALLACE 1920....

The CANADIAN FISHERMAN

*Official Organ of the Canadian
Fisheries Association*



CONVENTION NUMBER



REPORT
OF THE
FOURTH CONVENTION
CANADIAN FISHERIES
ASSOCIATION.

Steamships and Vessel Owners.

THE

Lockeport Cold Storage Co.

LIMITED

W. M. Hodge. President.



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Fresh



Frozen

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Fillets - Haddies - Kippers - Bloaters

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HEAVY
CRUDE OIL
ENGINE



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8½ CENTS A MILE ONLY

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The dependable.*

You will find “LION BRAND” CORDAGE on hundreds of vessels standing the strain, never failing in hauling in the good catch.

Specify “LION BRAND” on your next Cordage order and get the best.

Coast to coast service.

LION

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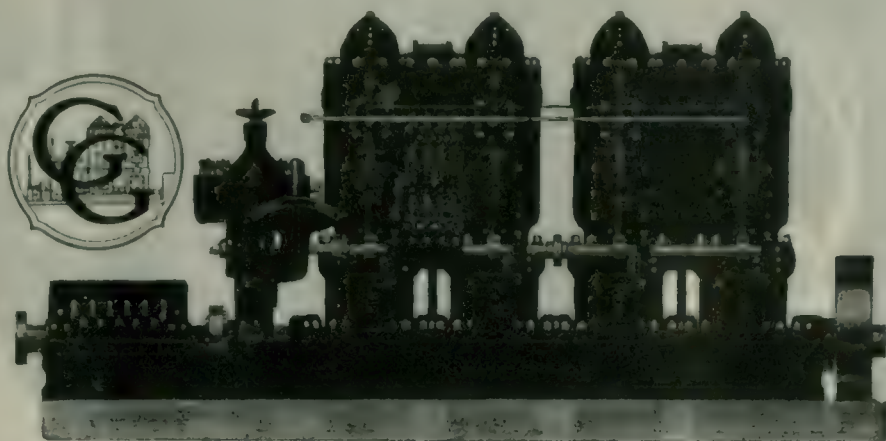
Consumers Cordage Company Limited

Mills at Dartmouth, N.S.
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Branches at Toronto, Ont.
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lies in the spirit
of enthusiasm
with which each
member regards
his share of
production*

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PORTLAND SACRAMENTO HONOLULU
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DRY AND PICKLED FISH FOR EXPORT

¶ The BRAND which has stood the test for many years, and is still the leader where QUALITY is the first consideration.

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HALIFAX, Nova Scotia

Exceptional Angling —Opportunities—

are offered by the Province of Quebec, which is the only one that leases exclusive hunting and fishing territories over large area of forest, lakes and rivers both to Clubs and private individuals, with the privilege of erecting camps thereon.

Membership may be obtained, if desired, in many existing clubs, with camp privileges already provided, and often with the right of erecting private summer homes on suitable sites on the club territory.

On all unleased Crown Lands and Waters, angling and hunting are absolutely free to residents of the Province, and the only charge to non-residents is the cost of the non-resident fishing or hunting license.

To the Wholesale Fish Trade

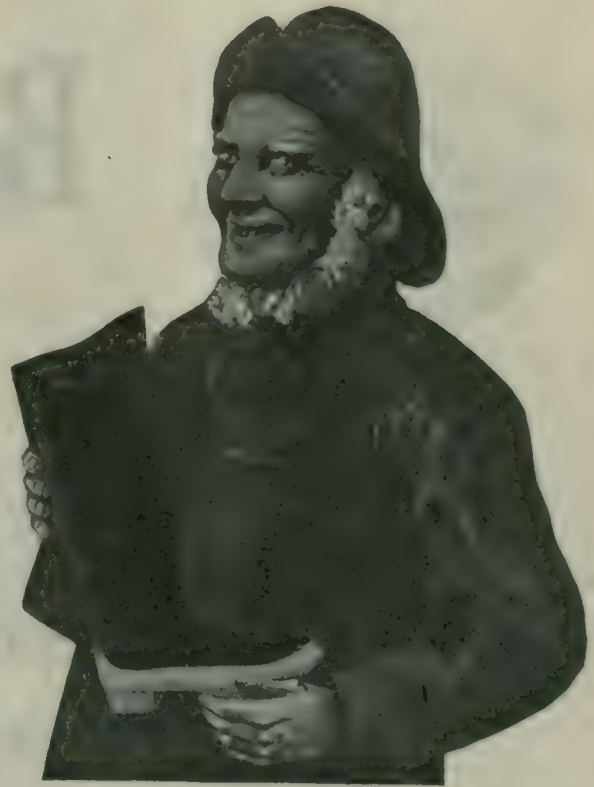
The attention of dealers who receive their fresh fish from Portland and other foreign sources is directed to the exceptional opportunities of obtaining their supply from the **Baie des Chaleurs** and the North Shore of the St. Lawrence, to their own advantage and that of their customers, and to the benefit of the fishermen of the Province of Quebec.

For all information apply to—

**The Minister of
Colonization, Mines and Fisheries
Of the Province of Quebec**

Veribest

*Especially
Constructed
for
FISHERMEN*



The All White AND White Sole Boots

Manufactured by

**The Independent Rubber Co., Limited,
Merritton, Ontario**



BRUNSWICK

= CANADA'S

The public have
confidence in
Brunswick Brand

In most every household where quality and perfection in Sea Foods are appreciated Brunswick Brand has won confidence and satisfaction. Prepared from the finest selected catches in an up-to-the-minute plant where "Purity" is the daily watchword, these incomparable Sea Foods are the embodiment of all that is wholesome and delicious.



Stock from the following list:

- ½ Oil Sardines
- ½ Mustard Sardines
- Finnan Haddies
- (Oval and Round Tins)
- Kipperd Herring
- Herring in Tomato Sauce
- Clams

BRAND SEA FOODS

BEST—



Sell Brunswick Brand Sea Foods for Profit and Reputation

Brunswick Brand Sea Foods offer an excellent profit and their great popularity insures grocers of a quick turn over. They have been proven by Government analysis to be more nutritious and less expensive than any imported lines, and it is this reputation for superiority and value that guarantees that perfect customer satisfaction that spells bigger sales and better profits.

Connors Bros., Limited
BLACK'S HARBOR, N.B.



TROYER-FOX

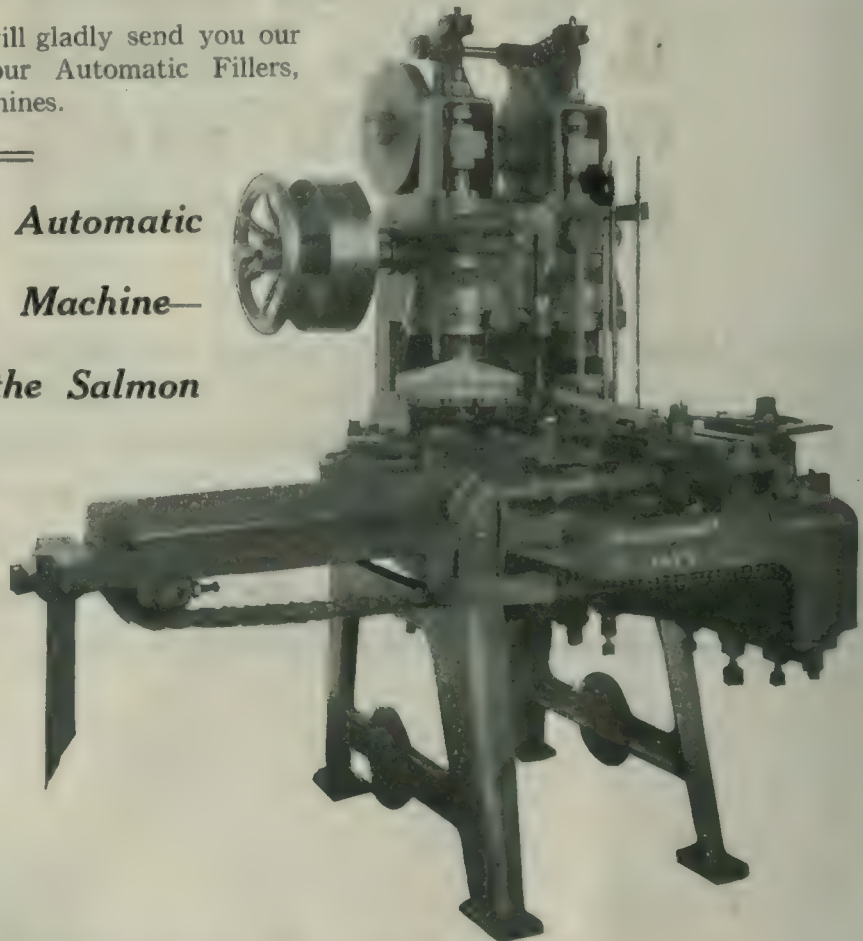
CAN MAKING and CANNERS' MACHINERY

are so well and favorably known by all Salmon Packers that wherever a number of "Live-Wire" packers get together to discuss "Ways and Means," you will find them all agreed on one point, *i.e.*, TROYER-FOX MACHINES, perfected by many years of close and intimate knowledge of the packers' needs—do stand up and give satisfactory service when the "big run is on."

If you have never had the good fortune to have TROYER-FOX MACHINES installed in your Cannery, then it has been to our mutual loss.

Let us remedy this. We will gladly send you our Catalog telling you of our Automatic Fillers, Clinchers and Closing Machines.

**4 DS 2-Spindle Automatic
Seamer or Closing Machine—
Special design for the Salmon
Packer—Speed 75 to
80 cans per minute.
Attachments for
No. 1 Tall, No. 1
Flat, No. $\frac{1}{2}$ Flat.**



WRITE AND TELL US OF YOUR NEEDS

SEATTLE-ASTORIA IRON WORKS

*Builders of TROYER-FOX Sanitary Can Making
and Cannery Machinery*

SEATTLE,

WASH.

Labrador Fisheries

QUEBEC OFFICES
147 MOUNTAIN HILL

Operating Plant and Cold Storage
SEVEN ISLANDS, QUE.

*Operating Fisheries North
Shore Gulf of St. Lawrence*

*Producers and Distributors
of*

Famous Moisie River Salmon

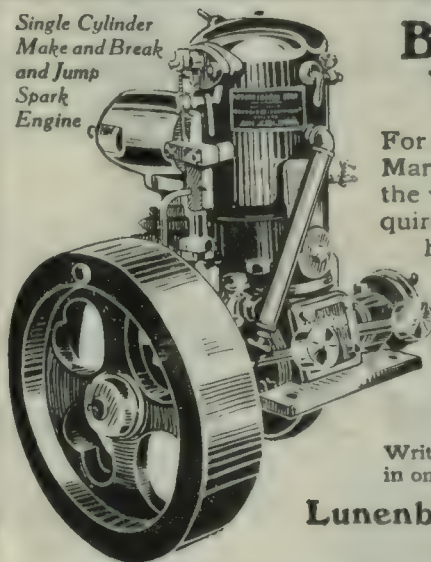
ORDERS SOLICITED

*Car Loads and Less than
Car Load Lots*

Safe - Simple - Satisfactory

Atlantic Marine Motors

*Single Cylinder
Make and Break
and Jump
Spark
Engine*



Built By Men Who Know

For years, we have been building Marine Engines that stand up to the work. We know what is required of an engine—and know how to design and build them to give the best results.

This is why an Atlantic Marine Motor comes to you fully guaranteed to be free from imperfections in workmanship and material.

Write for catalogue showing all designs in one, two and three cylinder motors.

Lunenburg Foundry Company Limited
Lunenburg, N.S.

||
HAVE
NO
EQUAL
||

||
STRONG
DURABLE
SPEEDY
||

*Built in Canada, By Canadians,
With Canadian Capital*



THE HOME OF ATLANTIC ENGINES

Write For Interesting Catalogue.

LUNENBURG FOUNDRY COMPANY, LIMITED.
LUNENBURG, :: :: NOVA SCOTIA

FISH, MILK, FRUIT for Export

We can quote attractive prices, C.I.F. (any port)
for the prompt shipment of:

CANNED SALMON	(Cham, Whitespring, Pink, Cohoe, Steelhead, Redsprings, Chinook, King, Reds, Blueback, Sockeye and Kipper)
CANNED PILCHARD	(Hand-packed)
CANNED HERRING	(Plain, Tomato Sauce, Kipper)
CANNED CLAMS	(Whole and Minced)
CANNED WHALE	(Like Finest Corned Beef)
CANNED MILK	(Evaporated, Sterilized; Condensed, Sweetened and Unsweetened)
DRIED FRUIT	"Castle" and "Hall" brands of Apples, Apricots, Cherries, Grapes, Peaches, Pears, Plum, Prunes, Raisins, Figs, Currants, Pineapple, Blackberries, Loganberries, Raspberries and Strawberries.
CANNED FRUIT	

HARRY HALL & CO., Limited

510 Hastings Street West, VANCOUVER, Canada



A GOOD
SELLER

We are Distributors
of the products of
BRITISH
COLUMBIA
ALASKA
WASHINGTON
OREGON
CALIFORNIA

Foreign Buying and
Selling Agents
Shipping and Com-
mission Merchants
Packers Selling
Agents
General Import
Brokers



ATTRACTIVE LABELS
STRONG WOODEN
BOXES

Double Wire Strapped
Tins Lacquered to Avoid Rust

CASES CONTAIN:

Salmon (Fresh)—	Shipping Weight
96 tins $\frac{1}{4}$ lb. net flat	79 lbs.
18 tins $\frac{1}{2}$ lb. net flat	40 lbs.
18 tins 1 lb. net flat	71 lbs.
48 tins 1 lb. net tall	71 lbs.
Salmon (Kipper)—	
96 tins $\frac{1}{4}$ lb. net flat	79 lbs.
Pilchards—	
96 tins $\frac{1}{4}$ lb. net flat	79 lbs.
18 tins 1 lb. net tall	71 lbs.
Herring—	
96 tins $\frac{1}{4}$ lb. net oval	82 lbs.
96 tins $\frac{1}{2}$ lb. net flat	79 lbs.
18 tins 1 lb. net oval	72 lbs.
48 tins 1 lb. net tall	71 lbs.

CORRESPONDENCE SOLICITED

Cable Address:
"HARALL," Vancouver, B.C.
Codes Used:
Western Union, 5th Letter
A B C, 5th Edition, with Five Letter
Edition
Armsby, 1911
Lieber—Bentley—Private

The quality and condition of all
shipments is inspected by a reliable
independent examiner before labelled
and shipped.

BEST QUALITY
AND SERVICE
IS OUR AIM



Booth Fisheries Co.

OF CANADA, LIMITED

Ocean, Lake and River Fish

Fresh Canned Frozen Salted Smoked

Prince Rupert
Port Arthur
Wiarton

TORONTO

Kingston
Montreal
Winnipeg

SARDINE CANNERIES

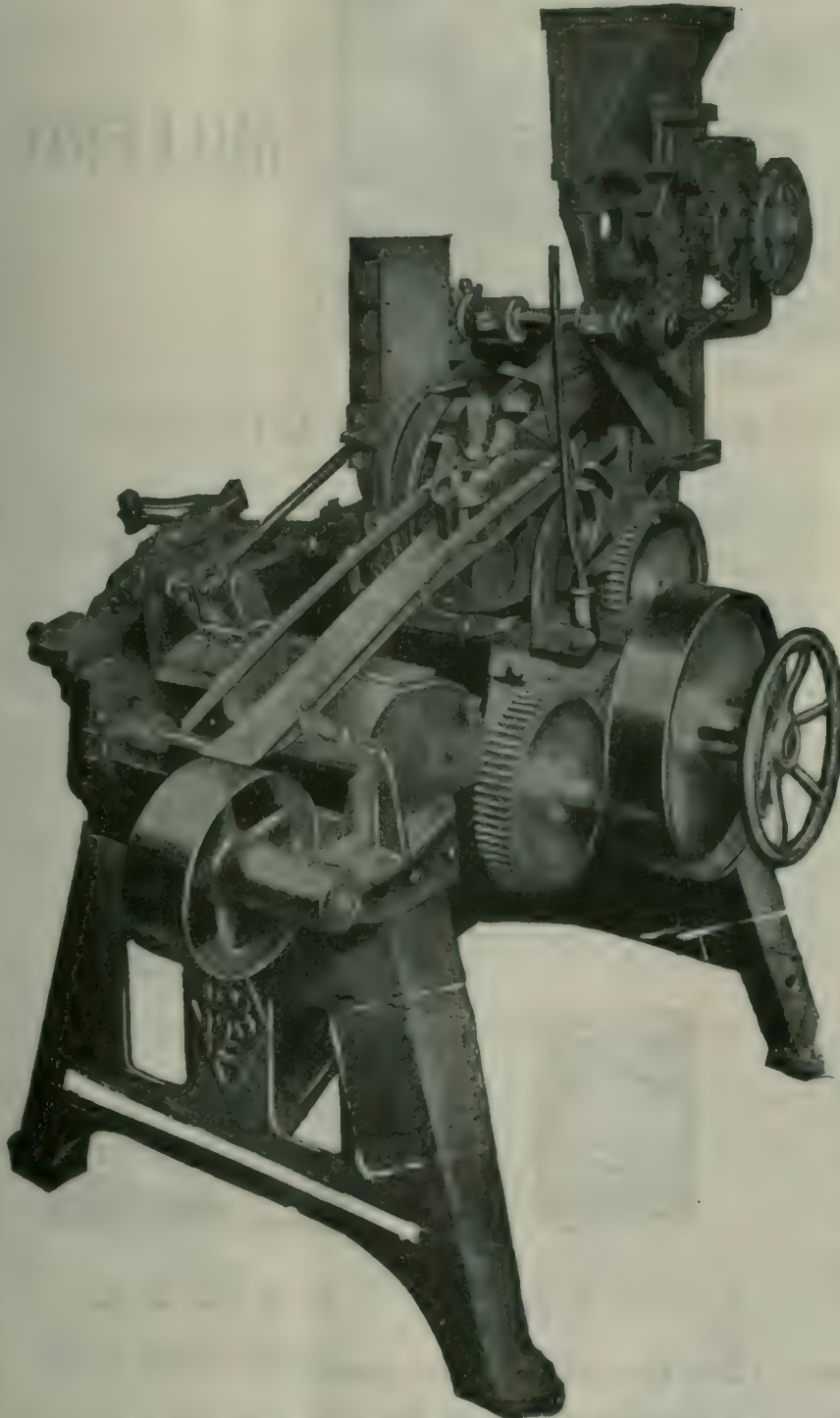
Chamcook, N.B.

St. John, N.B.

All communications should be addressed to the Booth Fisheries Company of Canada, Ltd., Toronto, Ontario; or the Branch Office at 205 No. Michigan Ave., Chicago, Ill.

Letson & Burpee, Ltd.

172 Alexander Street : Vancouver, B. C.



Patentees and
Manufacturers
of
**Cannery
Machinery
and
Equipment**

RETORTS, EXHAUSTERS,
FILLERS, FISH CUTTERS,
CONVEYORS, SEAMERS,
CLINCHERS, COOLERS,
TRUCKS
and all kinds of
TRANSMISSION MATERIAL

AT THE HEIGHT OF THE RUN

WHEN LABOR TROUBLE
LOOMS—Place your re-
liance on an L & B filler—
a tireless, non-striking
worker that asks no extra
pay for overtime.

80 to 90 tall cans per min-
ute—the fastest machine
of the kind in use.

Our patent chain fish feed,
a vast improvement over
the old style, is only one of
the distinctive features.

Filler for Half Pound Flat and Pound Flat Cans.

Don't waste money handling cans between the filler and exhauster—there's no need with our machine.

Canadian Made—Buy As You Preach Keep good Canadian money in
Canada and save the exchange.

SALMON! HERRING! PILCHARDS!

GOSSE



MILLERD

PART OF ONE OF OUR SIX PLANTS

Our Canneries are on the Fishing Grounds



PACKED

96 1/2-lb. Flats per case.
48 1-lb. Flats per case.
48 1-lb. Tails per case.

Nothing could be more conducive to a better appreciation of our various canned sea foods than a visit to our canneries. Built over the water, with the restless tides ceaselessly laving the thousand cedar piles that support the buildings; fragrant with the odor of pine, spruce and cedar, for the ever-green forests stretch from the water's edge to the snow-line. The Eternal Snows of the mountains above supply the abundance of pure, ice-cold water with which the fish are thoroughly cleaned.



PACKED

96 1/2-lb. Flats per case.



PACKED

96 1/2-lb. Flats per case.
48 1-lb. Flats per case.
48 1-lb. Tails per case.

From the moment the fish are snatched, wriggling, from the icy brine, till they are processed in the can ready for your customer's table, they are subject to conditions and to methods that are nothing short of ideal.



PACKED

96 1/2-lb. Flats per case.



PACKED

96 1/2-lb. Ovals per case.
48 1-lb. Ovals per case.



PACKED

96 1/2-lb. Flats per case.
48 1-lb. Tails per case.



PACKED

96 1/2-lb. Ovals per case.
48 1-lb. Ovals per case.

Gosse Millerd and Quality are Synonymous.

GOSSE-MILLERD PACKING COMPANY, LIMITED

SALMON AND HERRING CANNERS AND PACKERS

Head Office, 597 Hastings St. West,

VANCOUVER, B.C., Canada



The Canadian Fisheries Association

Organized 1915

A Non-Partisan, Non-Political Organization for the Development of the Fishing Industry of Canada along Modern and Progressive Lines.

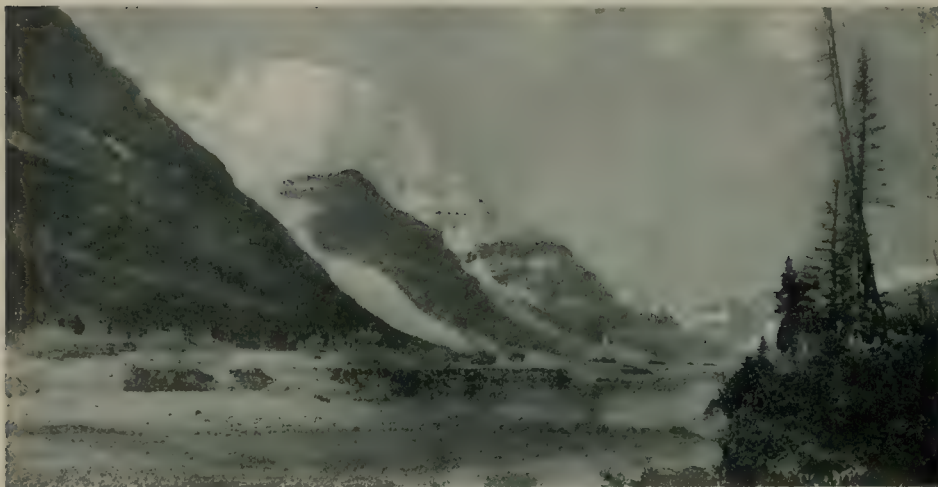
Membership open to all persons engaged directly or indirectly in the Fishing Industry of Canada.

For all particulars address

The Secretary,

CANADIAN FISHERIES ASSOCIATION

GARDENVALE, Que.



Mount Robson and the Robson
Glacier, Mount Robson Park,
British Columbia.

CONVENTION SNAPSHOTS

ALONG THE LINE OF THE
GRAND TRUNK PACIFIC

Mount Edith Cavell, Jasper National Park, Alberta.



Section of the Business Dis-
trict, Prince Rupert, British
Columbia.



Acadia Engines :: :: Always Dependable

Two and Four Cycle
GASOLENE AND KEROSENE
Quality Counts

ACADIA GAS ENGINES, LIMITED

Head Office and Factory	-	-	-	BRIDGEWATER, NOVA SCOTIA
Branch Office and Warehouse	-	-	-	ST. JOHN'S, NEWFOUNDLAND



"MIGRACE" ACADIA EQUIPPED

Acadia Engines For Work or Pleasure

The operating, maintenance expense and the cost of idleness are more important than the purchasing price. The poorer the Engine the more it costs for fuel, renewals and repairs.

All parts are standardized and interchangeable. Orders for small parts are filled with the quickest possible dispatch.

Acadia Engines are the result of twelve years of careful study and practical experience, contain only the very best material, are simple in construction, easy to operate, and are dependable under all conditions.

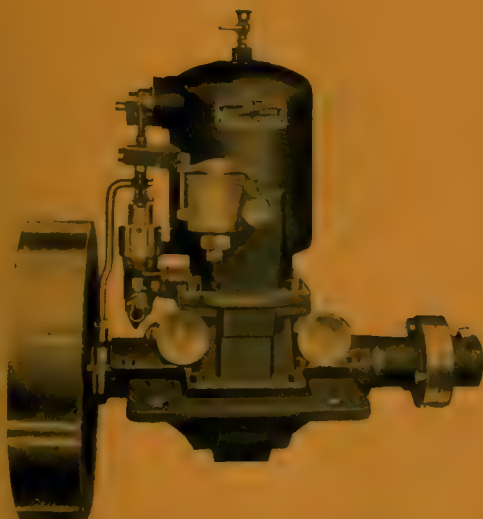
Acadia Gas Engines, Limited

BRIDGEWATER, NOVA SCOTIA

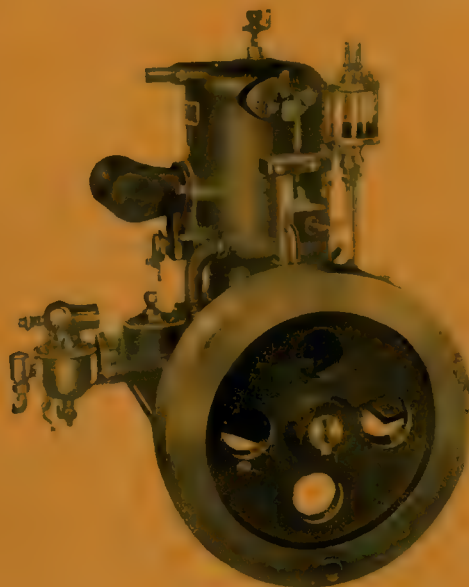
Branch Office and Warehouse, - ST. JOHN'S, NEWFOUNDLAND

Largest manufacturers of Marine Engines in Canada.

ACADIA MOTORS

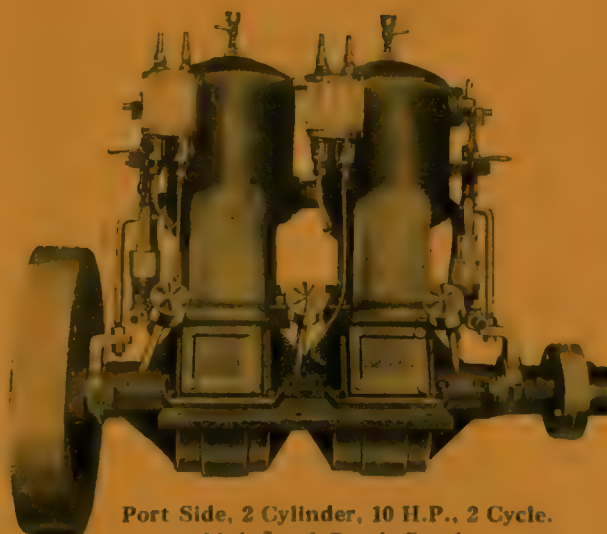


Port Side, 4 H.P., 2 Cycle. Make and Break Spark. Showing Kerosene Carburetor.



Front View. 6 1/2 H.P., 2 Cycle. Make and Break Spark

ACADIA Motors
have over 12 years
of successful ser-
vice to their credit



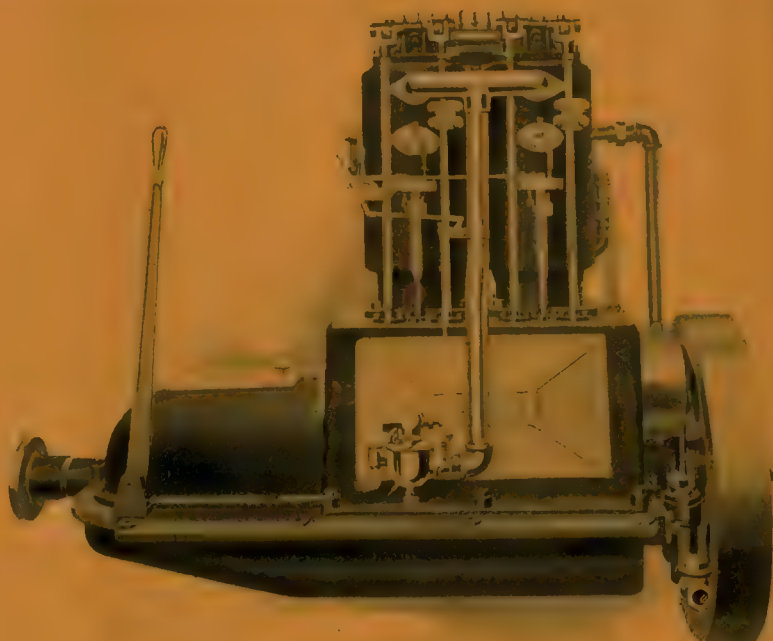
Port Side, 2 Cylinder, 10 H.P., 2 Cycle.
Make and Break Spark.

Write for Catalog
showing our com-
plete line.

ACADIA GAS ENGINES, LIMITED

Largest Manufacturers of Marine Engines in Canada

Head Office and Factory - - BRIDGEWATER, Nova Scotia
Branch Office and Warehouse - - ST. JOHN'S, Newfoundland



20 H.P., 2 Cylinder, 4 Cycle, Heavy Duty, Acadia Marine Engine

ACADIA

4 Cycle, Heavy Duty Marine Engines

Bore $6\frac{1}{2}$ " Stroke 8" :: 1, 2, 3 & 4 Cylinders



*Acadia Engines contain the best material the market affords,
and are of the most modern design.*

Easy to operate, strongly built and price satisfactory.

Acadia Gas Engines, Limited

Largest Manufacturers of Marine Engines in Canada

BRIDGEWATER, Nova Scotia

*A Few Reasons why "ACADIA" FOUR CYCLE
ENGINES Develop the Maximum Horse Power, are
Economical in Operation, have Small Upkeep in
Charges and are Easy to Operate.*

Removable Cylinder Heads.

Extra Long Bearings.

Passover Pipes for water.

Thrust taken by Ball Bearings.

Individual Cylinders, ground accurately to size.

Engine Bed extends full length under Reverse Gear.

Make and Break Ignition, Batteries or Magneto.

Gravity Oiling System from a multiple sight feed oiler.

Cam Shaft is removed through side of Crank Case.

Overhead Valves, interchangeable with ground joints in removable cages.

Exhaust Manifold is water jacketed with extra large center opening, thus allowing free exit for exhaust.

Reverse gear, Internal gear type, covered and equipped with hand hole plate for inspection or adjustment.

No water passing through gaskets to head, avoiding possibility of water getting into cylinder by leaky gasket.

Circulating Pump, plunger type, running at half speed, thus insuring long life to wearing parts.

Forged Steel Cams, machined accurately to size and shape, hardened and ground to insure proper timing of valves. Side plate doors secured by spring catches, easily removed, making it convenient for operator to inspect or adjust cam shaft or crank shaft.

Screws and Studs made from cold rolled steel in our own automatic screw machine.

Built by expert mechanics in a factory equipped with the most modern machinery.

Acadia Stationary Engines

Simple
in
Construction

A
C
A
D
I
A

100% Service



Easy
to
Operate

A
C
A
D
I
A

100% Value

6 H.P., Mounted on Skids, 6" Bore, 10" Stroke

Adaptable for use on Land or Sea

This design of Engine is most famous and universally used along the Atlantic sea board and the Island of Newfoundland for use on board schooners, sawing lumber, etc.

For smooth, steady, reliable power and for economical service, the "ACADIA" is without a rival. It will save time and money, and is ready to run as soon as uncrated and supplied with fuel.

ACADIA STATIONARY ENGINES, LIMITED

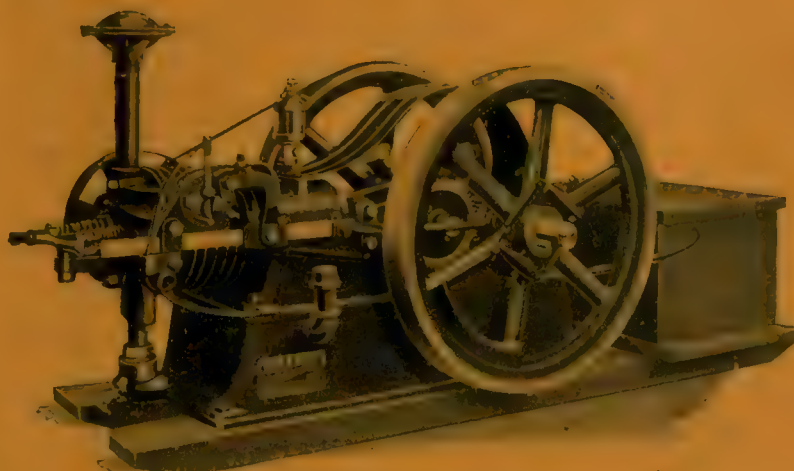
Bridgewater, Nova Scotia

ACADIA STATIONARY ENGINES

Powerful

**A
C
A
D
I
A**

Economical



Strongly Built

**A
C
A
D
I
A**

Durable

1 1/2 H.P. Air Cooled Bore 3 1/4", Stroke 5"

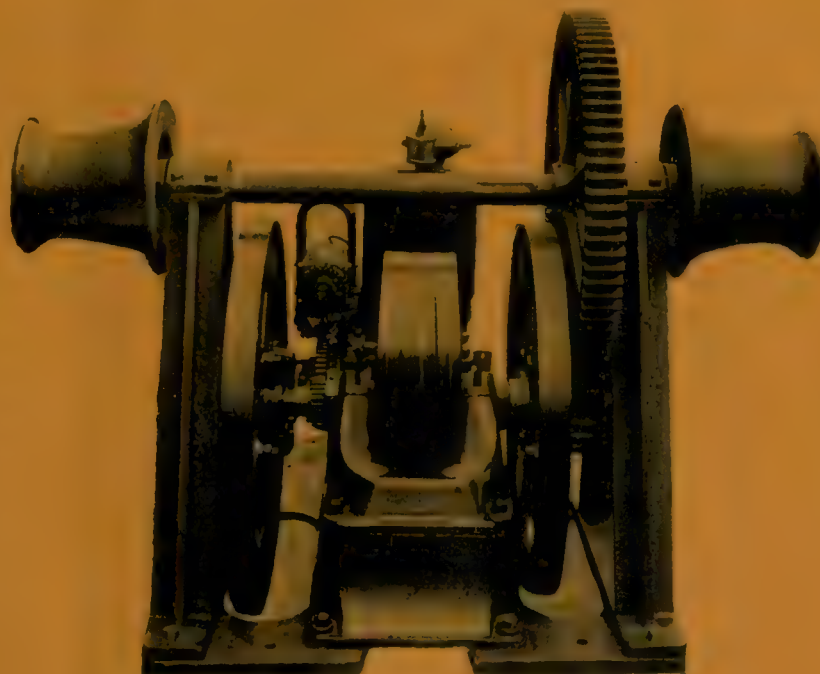
Acadia Stationary Engines are built in sizes of 1 1/2, 2 1/2, 3 1/2, 4 1/2 and 6 H.P., and are suitable for any purpose where a Stationary Engine may be used, from our 1 1/2 H.P. for operating Lobster Hoists, Sealing Machines, Milking Machines, etc., to our Big Six with its 6" Bore and 10" Stroke for hoisting Cargo, Sails, Anchor, Sawing Lumber, etc.

Lifting power on a single fall:-

2 1/2 H.P., 400 lbs.

3 1/2 H.P., 700 lbs.

Engine is complete on iron base, easily fastened to any firm foundation. Used for all purposes where a small hoisting engine is needed.



**BUILT FOR
BUSY MEN**

Responsive, willing, well-built honest engines, with the same *extraordinary* vim, punch and go that has placed all of the "ACADIA" products in the enviable position which they occupy.

"ACADIA" General Utility.
Combined Engine and Hoist. 2 1/2 and 3 1/2 H.P.

ACADIA STATIONARY ENGINES LIMITED
Bridgewater, Nova Scotia

10 REASONS

Why ACADIA Products Lead

They are the result of twelve years of careful study and practical experience.

They have an enviable and widespread reputation.

They have a liberal guarantee and are supported by a strong company.

They have a design conspicuous for simplicity and sturdiness.

They have outstanding features of accessibility and beauty.

They are built from dimensions that insure an excess of their rated horse power.

The materials used in construction are the best obtainable.

They are durable and will give many years of satisfactory service.

The large production and modern machinery permits their sale at a moderate price.

They are sold by the best of dealers who give prompt service.

MANUFACTURERS of ACADIA PRODUCTS

Bridgewater, Nova Scotia

Buy Beaver Brand

FROZEN

MACKEREL, HERRING
COD, HAKE, CUSK,
HADDOCK
and POLLOCK

SALTED

COD, HAKE
POLLOCK and CUSK



Beaver Brand

SMOKED

FINNAN HADDIES,
BLOATERS,
KIPPERS and
FILETS

"Carload Lots a Specialty"



Plant at Liverpool, N.S.

All our goods are prime stock, as everything we buy is practically alive when removed from the fishing boats and taken into our plant.

As we smoke only the finest grade of Haddock, the finished product should be of particular interest to discriminating buyers. Fish taken right out of the water at our plant at Liverpool and smoked in a thoroughly modern smoke-house.

Storage Capacity 6,000,000 lbs.

North American Fisheries & Cold Storage, Ltd.

Plant: LIVERPOOL, NOVA SCOTIA

E. J. MURPHY, Managing Director

New York Office:

ARCH 11, BROOKLYN BRIDGE
Telephone Beekman 1873

Boston Representative:

FRANK, J. LEACH,
Boston Fish Pier, Boston, Mass.

“Rupert” Brand

Canadian Fish & Cold Storage Co., Limited

Wholesale Dealers, Packers and Shippers of

Fresh, Frozen, Smoked, Salt and Canned Fish
**HALIBUT, SALMON, HERRING,
CODFISH, ETC.**



Cold Storage 7000 tons. Ice Making Capacity 80 tons daily
Ice Storage 2000 tons

Head Office and Plants

PRINCE RUPERT, B.C. (Canada)

CORRESPONDENCE INVITED

BRANCHES: Vancouver, B. C., Chicago, Ill. U. S. A

W. R. SPOONER

Wholesale and Commission Dealer

FISH OF ALL KINDS

119 Youville Square, - MONTREAL

*I am in the Market at all times to Buy or Sell on
Commission, Fresh, Frozen Smoked and Salt Sea
and Lake Fish in Carload Lots or less.*

CORRESPONDENCE SOLICITED

REPRESENTING

National Fish Company, Limited

Halifax and Port Hawkesbury, N.S.

OWNERS AND OPERATORS

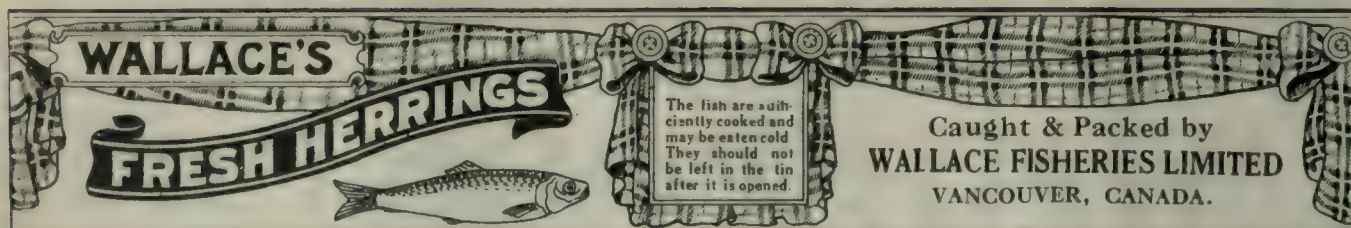
Steam Trawlers—"VENESTA" and "LEMBERG"

"NATIONAL BRAND"

Haddies, Fillets, Kippers,
Bloaters, Scotch Cured Herring

PRODUCERS

Fresh, Frozen and Salt
Sea Fish



Know Your Product.

The purchasing of canned herring should be done with the utmost care.

When you are placing before the consumer a product that you know is going to please, you are sure of repeat orders, and they will invariably specify the brand.

Buy Wallace's Fresh Herring

— WITH THE —
T A R T A N
ON THE LABEL.

You are then sure of getting the best in canned herring. This company's plants are adjacent to the waters in which schools of herring in teeming thousands abound. Caught and delivered at their canneries when in the prime of condition, and processed by the most sanitary and modern machinery, the finished product is unequalled in quality and flavor.

IT PAYS TO KNOW YOUR PRODUCT.

WALLACE FISHERIES, LIMITED,

VANCOUVER BLOCK,

VANCOUVER, B.C., Canada.

Codes :

*Armsby
A.B.C. 5th Ed.
Western Union
California Fruit Canners*

Cable Address :

"Brokers."

M. DesBrisay & Co
Vancouver, B.C.

Salmon Canners
Commission Agents
Importers & Exporters

These are our Brands:---

"LACROSSE"

"SOCKEYE"

"SUNDIAL"

"COHOES"

"RAINBOW"

"PINKS"

"SMUGGLER"

"CHUMS"

Western Packers

LIMITED

Canned Salmon,
Frozen Salmon,
Frozen Halibut.

We Specialize in mixed carload shipments
of only choice, Northern British Columbia,
Frozen Fish of All Grades.

WE SOLICIT YOUR ENQUIRIES.

BUTEDALE CANNERY,
Butedale, B.C.

MARGARET BAY CANNERY,
Smith's Inlet, B.C.

SHUSHARTIE CANNERY,
Shushartie Bay, B.C.

Cold Storage at Butedale with capacity of
approximately 2,500,000 Lbs.

1414 Standard Bank Bldg.,

- - VANCOUVER, B.C.

R. V. WINCH & Co.

LIMITED

EXPORTERS and DISTRIBUTORS

CANNED

Sockeye,
Spring,
Cohoe,

Steelhead,
Pink,
Chum.

SALMON

Selling Agents

— FOR —

Northern B. C. Fisheries,

LIMITED

HEAD OFFICE

Winch Building,
Vancouver, B.C.,

CABLE ADDRESS

"Robertus."



THE CANADIAN VANCOUVER

Efficiency and the maintenance of the highest standard of quality is the dominating factor behind the operations of The Canadian Fishing Company, Ltd., Vancouver.

The Company recognizes that in **Efficiency both Quality and Low Cost to Consumer** can be maintained.

On this basis, it has organized and established the most modern and completely equipped plant on the Pacific Coast for the handling and manufacture of fish and fish products.

Every branch of the fishing industry is carried on within the confines of the Company's Vancouver plant—a concentration of shore operations which is the result of years of effort and experiment by the management and which is designed

to ensure products of the highest quality and the use of every economy in production.

In addition to concentrating every mechanical means possible for the economical production of high grade sea foods, the Company has brought together a staff which is one hundred per cent efficient in their particular business. Each has had many years experience in the fishing industry and all have been selected for their offices through the expert knowledge which they possess.

The human factor in labor is eliminated wherever possible and electrically driven machinery, much of it specially designed for their purposes, is used everywhere throughout the plant. The latest methods for the handling, packing, freezing, curing,





FISHING CO., LTD.

CANADA

smoking and canning of fish are installed just as soon as they are proved to be the best.

SOME FACTS AND FIGURES

The Company's fleet of fishing craft includes six steamers, three schooners, seven seining vessels as well as numerous tugs and launches.

The Company has buying stations and collecting boats covering practically all fishing centres along the British Columbia coast.

The Company's ice making plant manufactures fifty tons of ice per day and there is storage with a capacity of two thousand tons.

The capacity of the Company's Fish Cold Storage plant is seven million pounds.

The Company's curing plant is capable of turning out 25,000 pounds daily.

The Company's cannery consists of three lines of canning machinery with a daily output of two thousand cases.

Double trackage facilities running into the plant will accommodate twenty-five refrigerator and freight cars.

The Company's facilities for handling fresh fish enable them to discharge fresh fish cargoes rapidly and load and despatch many carloads of this perishable product in one day.



Established 1874

D. Hatton Company

MONTREAL

Largest Receivers and Distributors

of all kinds of

FISH

IN THE DOMINION

Experts in the handling of

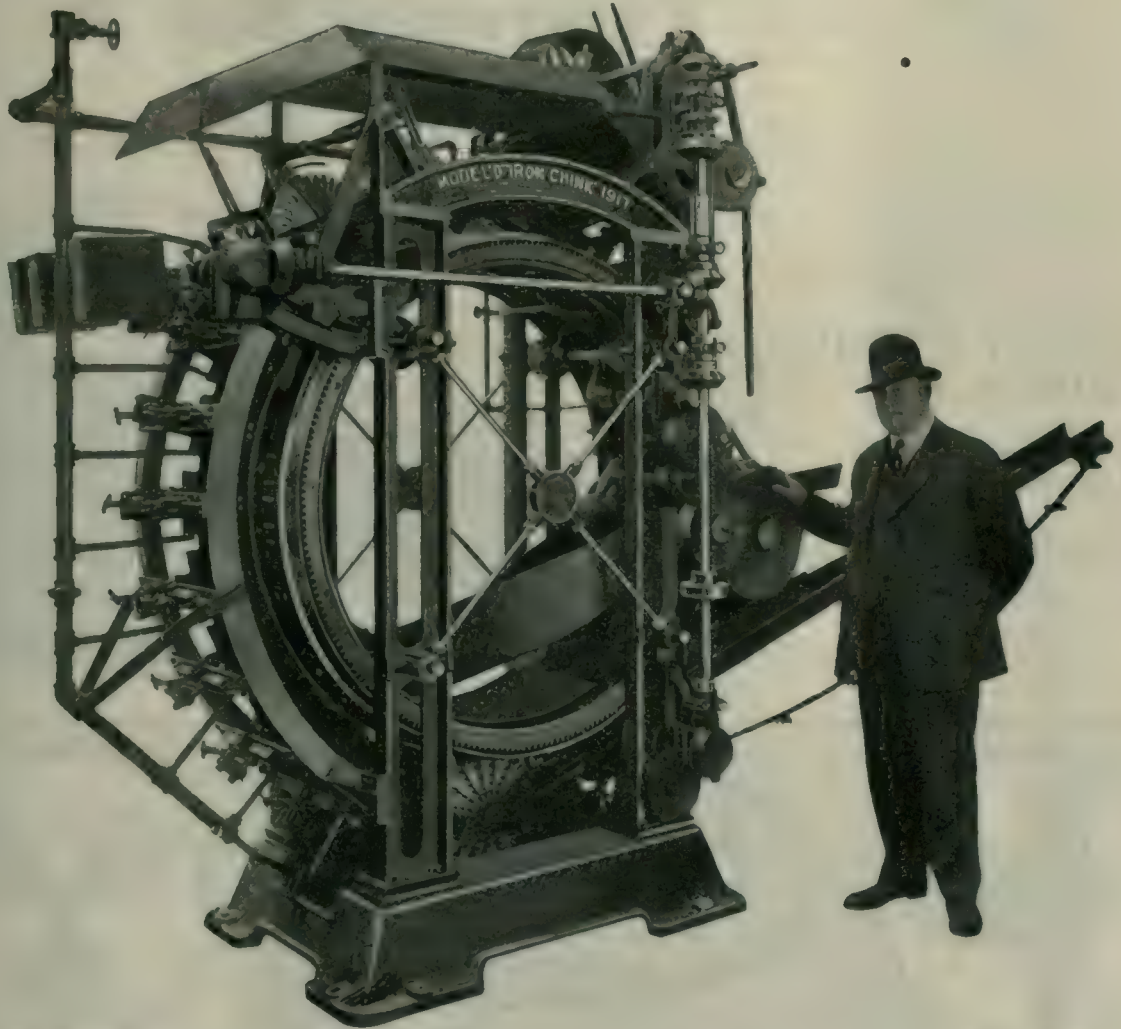
Bulk and Shell Oysters

Proprietors of the NIOBE BRAND Haddies, Fillets,
Kippers, Bloaters and Sardines in the
Purest of Olive Oil

Also IVORY BRAND of Boneless Codfish put up in
1 and 2 lb. Blocks, 20 lb. Boxes

*Whether you want to Buy, Sell or Talk FISH, communicate with us
It will always pay and interest you*

The New "Iron Chink"



A COMBINED BUTCHERING, CLEANING AND SLIMING MACHINE. THE ONLY MACHINE OF ITS KIND ON THE MARKET.

For the past seventeen years we have been manufacturing Butchering and Cleaning Machines for use in the salmon industry.

These machines have proven themselves great labor and fish savers and a packing plant is not considered complete without one.

The above illustration shows our latest improved model—one that is far superior to any we have heretofore manufactured.

Full information, prices, terms, etc., furnished on application.

Smith Cannery Machines Company

PATENTEES AND MANUFACTURERS

2413-2423 FIRST AVENUE SOUTH,

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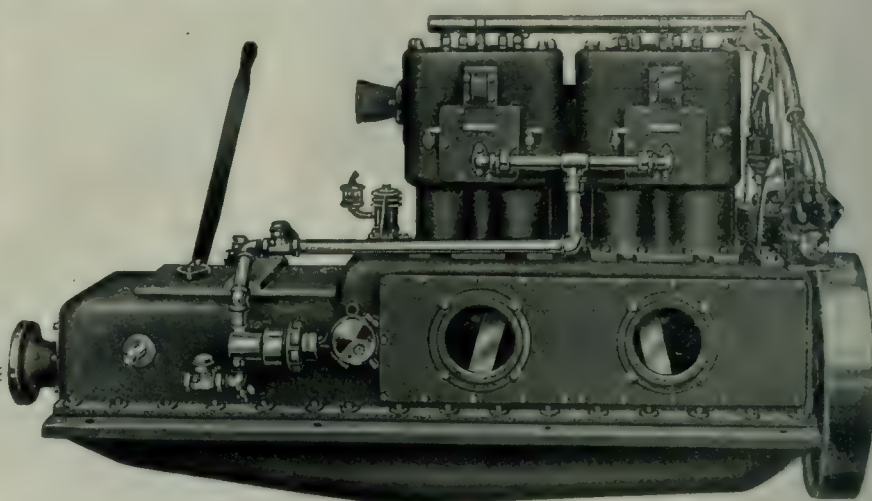
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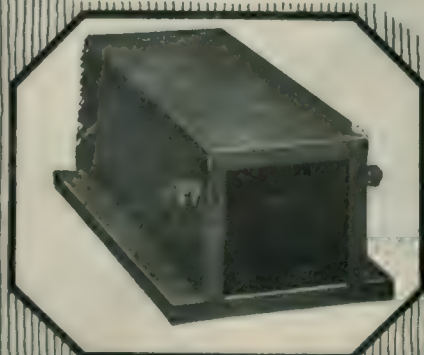
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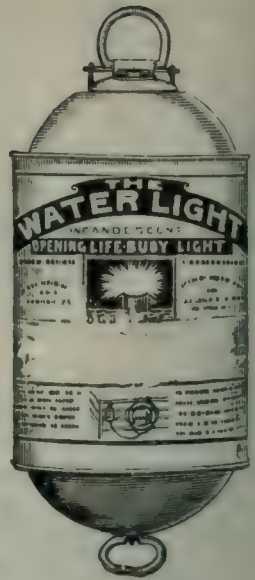
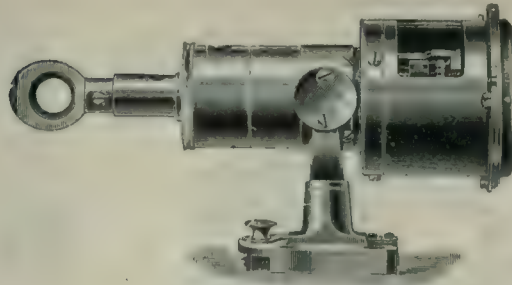
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To All Commercially Interested In The Fishing Industry

- ¶ Are you earnestly doing your very best for the development of the fisheries?
- ¶ Are you a believer in big profits, at any cost, to the industry?
- ¶ Or, have you always in mind that it is a national property, of which you are merely a custodian?
- ¶ Relatively, the public is in the position of a minor who does not realize the value of a property bequeathed to him.
- ¶ Are you as conscientious and scrupulous in the people's interests as you would be as the executor of a private estate?
- ¶ If not, why not?

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**Department of the Naval Service,
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Board of Trade regulations,
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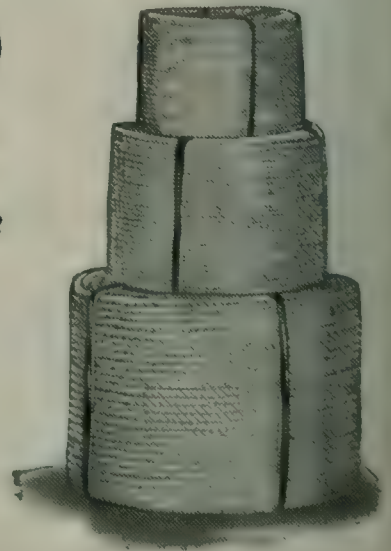


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THE CANADIAN FISHERMAN

A Monthly Journal devoted to the Commercial Development of the Fishery Resources of Canada, and the Technical Education of those engaged in the Industry.

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payable in advance

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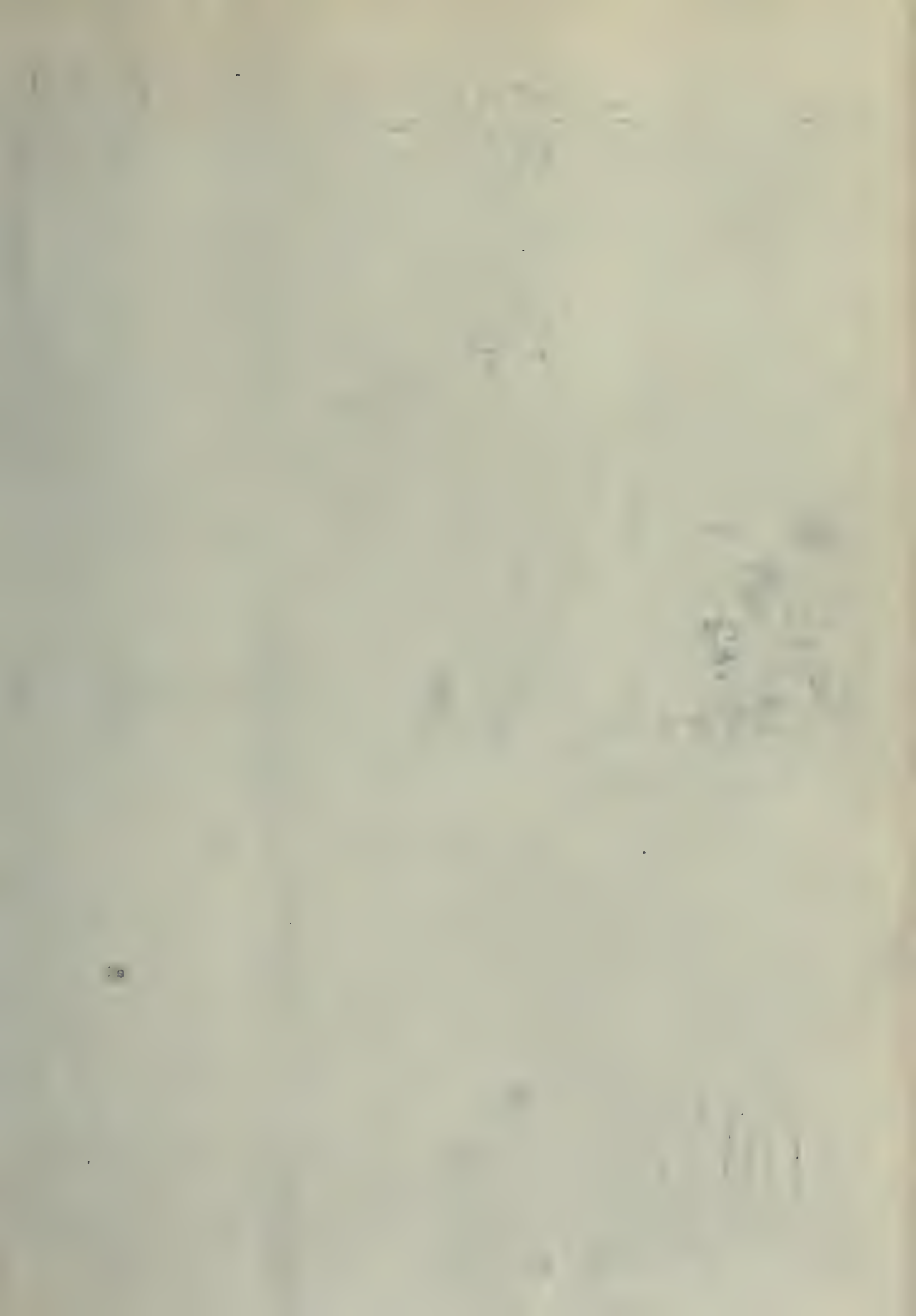
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The Canadian Fisheries Association Convention

A Wonderful Event with a Record Attendance—Business and Pleasure Excellently Combined—a New Milestone in Canadian Fishery Progress



After months of preparation and the planning of the smallest details, the Canadian Fisheries Association Fourth General Convention was held in Vancouver on June 3rd, 4th and 5th, and materialized into a wonderful success. The outcome of the event justified all the efforts and expense put into it, and when the Convention ended, all those who did the work expressed themselves as being satisfied, while the delegates and guests vowed it was the best ever, and went back to business with new ideals and a better conception of the Association and the spirit which animates the organization.

To no center can all the credit be given. It was a Pacific Coast affair—British Columbia, to be exact. Vancouver, Prince Rupert, Victoria, Nanaimo, New Westminster, all had a share in it, and they might well be proud of the manner in which they accomplished things. The whole fishing industry on the Coast got behind the Committee in charge and assisted the Vancouver Branch of the Canadian Fisheries Association financially and otherwise. "We'll give them a Convention to talk about!" was their slogan, and they most certainly did.

When they do things on the West Coast, they do it with their whole heart. There is no such a thing as half-way measures with the British Columbians. When they invited the members of the C.F.A. to convene in Vancouver, they set out to make it a Canadian Fishery Congress to be talked about even should other conventions intervene. "We'll make it the best yet, and a record to live up to," they said. And they did. The eastern members have already started to worry out plans to pull off the next convention on a commensurate scale.

A Convention Committee was appointed under the chairmanship of Vice-President A. L. Hager of Vancouver. The first thing he did was to appoint a hand-picked crowd of "live ones" to head various sub-committees. Each committee had a certain task to perform and it had to be performed "100 per cent efficient." The Finance Committee were let loose on all the owners of bank accounts on the B.C. coast and never one of those gold hunters came home to report but what he had the goods in the shape of somebody's check. And they didn't have to pry it loose or cajole it. The money was given freely and no accounting

was asked for. "It'll be blown in on joy and jazz," the donators were told, and they smiled and said: "Go to it, and if you need more, drop in again!"

With ample funds, the work of planning the various business meetings and entertainment was commenced. National Secretary F. W. Wallace went to the Coast last February and sat in with the Committees on arrangements and a programme was drawn out. With the exception of but one or two details, this programme was carried out exactly as planned. A week prior to the Convention, Secretary Wallace arrived in Vancouver and the local committees tabled their work and the plans were ratified. Secretary F. E. Payson of the Vancouver Branch was busy on Publicity two weeks prior to the Convention date, and he managed to secure a newspaper staff which gave the Association and the Convention more space in the press than any similar organization ever secured before.

Everything was done on original lines; and no expense was spared. The visitor to Vancouver during the Convention week could not fail to realize that the Fisheries Association was in town. Posters hung in all the prominent places in the Hotel Vancouver denoting the way to the Registration Desk, the Convention Hall, and the Association Headquarters. Banners stretched across Granville Street stated that the Canadian Fisheries Association were holding their Fourth General Convention and that "Vancouver extended the Glad Hand"; automobiles transported delegates and guests and their wind-shields and tops carried pennants extolling the virtues of fish in cunningly worded phrases—"Fish Is Sure Healthy," and so on, and delegates and guests, ladies as well, wore neat silver Association medallions and badge ribbons.

The newspapers carried four column group photographs of the delegates; photographs of the prominent officers and cartoons of the speakers, while the space they devoted to the proceedings was amazing. Mr. Payson and his cohorts deserve special commendation for the Publicity.

Starting on Tuesday, June 1st, the Reception Committee met the incoming trains and boats and guests and delegates were taken to their hotel and handed the keys of their rooms. All the Association members in Vancouver closed up their desks for a week

and devoted themselves to the Convention. The enthusiasm of these men and their loyalty to the cause resulted in the lengthy and varied programme being run off with clockwork-regularity and as smooth as silk.

Chairman Hager's instructions to his committeemen were: "Do not allow any drag in the proceedings. Keep our guests busy all the time. See that everybody has a good time. If you see anyone kicking around with nothing to do or no place to go, it is up to you to entertain him. Drive him around or take him to dinner." This exhortation was carried out to the letter. Nobody spent an idle moment. Even sleep was tabooed.

Special mention can be made of no single person on the Vancouver Committees. They all worked hard and acted like princes.

The Convention opened at 10 a.m. on the morning of Thursday, June 3rd, at the Hotel Vancouver. At lunch, the delegates and guests were entertained by the Vancouver Branch of the C.F.A. at the Hotel Barron. The ladies were present at this lunch and the affair was enlivened by informal dancing between courses.

When the men resumed sessions again in the afternoon, the ladies went off on automobile tours and at 4 p.m. attended a reception in the Blue Room of the Hotel Vancouver. In the evening, Vancouver members took delegates and visitors out to dinner in private parties, and at 8.15 all hands, ladies and gentlemen, went to the Orpheum Theatre, where the front rows of the orchestra seats were reserved for the "fish people."

Some amusement was caused at the theatre when one of the vaudevillians pulled off some jokes at the expense of the fishery "prominents." Alf. Brittain, Al. Hager, Jimmy Eckman, Harry Short and Charley Julian were the subject of some clever stage repartee and all of them are still busy trying to find out who tipped the joke-smith off to their idiosyncrasies.

The conclusion of the theatre party would have sufficed to "call it a day," but not a Vancouver day. After shepherding the ladies home, the men-folks hied to the Navy League Auditorium where a smoking concert and athletic tournament was staged. Vaudeville singers and card manipulators from the Orpheum Theatre did their stunts and the athletic end of the programme featured Japanese sword-fighters and jiu-jitsu wrestlers, and boxing matches from paper-weights to sluggers who topped the beam at over two hundred. It was two in the morning, or maybe it was three in the morning, or as Harry Lauder would say, "He didn't know what time it was" when the party broke up, but it was pretty early or late, anyway.

The slim attendance at the Convention room at ten next morning caused the Chairman to remark that "The Vancouver people were unable to stand the pace," but they soon filed in. At noon on Friday, the delegates, guests and their ladies inspected the plant and cannery of the Canadian Fishing Company, and were the guests of Mr. Hager to lunch there. In the afternoon, everybody went for a sail to Indian River. On Friday evening, the men held a business session while the ladies were entertained by Mrs. A.

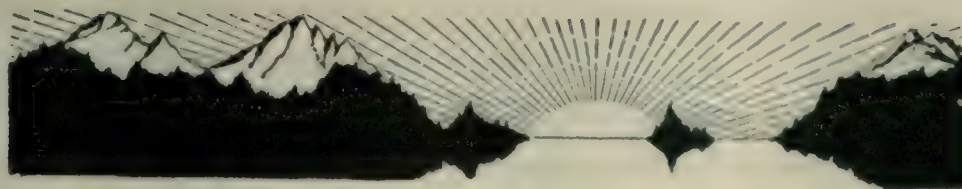
L. Hager at a musicale at the Hager home.

Saturday morning saw the men at business again, while the ladies went on an auto drive to Capilano Canyon and lunched at the Canyon View Hotel. The Vancouver members of the C.F.A. were tendered a luncheon by the National Executive in the Hotel Vancouver, and finished up the business sessions by the passing of resolutions and the election of officers during the afternoon.

The ladies evidently had a delightful time at the Canyon and a wonderful luncheon, and later in the afternoon they were entertained to afternoon tea at the home of Mrs. Shull, Shaughnessy Heights. For dinner, they repaired to the Hotel Barron and had a Banquet, while the men were engaged in the more formal Convention Banquet at the Hotel Vancouver. A pleasant re-union was effected at ten o'clock on the Saturday evening, when the ladies joined the gentlemen at the Hotel Vancouver and wound up a wonderful three days' programme with a dance.

The relation of these events in cold type cannot give the reader an adequate idea of the many pleasant private entertainments nor the overflowing joyousness and hospitality which seemed to be everywhere. Members of the Association from other places felt the real true spirit of the Association of interests and ideals, and went home feeling glad that they made the trip and proud to belong to an organization which could do so much to bring the Industry together. Visitors from the United States—and there were many—stated frequently in admiration, "You fellows up here have got us skinned a mile. You've got an organization that is doing things worth while, and it makes us envy you. How do you do it? We don't seem to be able to get our fish men east and west lined up like you men have." The supposedly cold, calculating men of science and the unimpressible Government officials (that's the popular idea of them; they are not really) found in the Canadian Fisheries Association an organization which was out to help them and not to criticise, and the many deliberations were of the things that were their life-work. One of the best compliments of all was paid by the management of the Hotel Vancouver—that vast and elaborate hostelry which is the pride of the West Coast—when they said: "The Canadian Fisheries Association are welcome at the Hotel Vancouver any time. Conventions to us are usually strenuous and unpleasant affairs. They mean noise, complaints from other guests, drinking, dirty rooms, broken furniture and so on. During your Convention, not a single complaint has been made, and not a charge has been registered against any of your members. The whole affair has been conducted quietly, orderly and in the most gentlemanly manner. You are welcome to come again any time."

The time is not far distant when we will have to visit the Pacific Coast again, and be it three or four years from now, those who attended the Fourth Convention will look forward to re-visiting British Columbia with feelings of anticipatory pleasure. Montreal is forecasted for the next convention, and Montreal will have something to do to attain the mark set by the Pacific city, but Montreal has learned how to do it. Vancouver has shown how it may be done.



CONVENTION PROGRAMME

Thursday, June 3rd, 1920.

10.30 a.m. Opening of Sessions at the Convention Room, Vancouver Hotel.

Convention called to order by President Brittain. Welcome to delegates and guests by Hon. William Sloan, Commissioner of Fisheries, British Columbia Government. Welcome to Delegates and Guests by His Worship Mayor Gale, of Vancouver. Welcome to Delegates and Guests by Chairman F. E. Burke, on behalf of the Vancouver Branch, Canadian Fisheries Association.

11.00 a.m. Business Session (for Members Only).

President A. H. Brittain in the chair. Report of the Association's Work since August, 1918, by President A. H. Brittain. Report of C. F. A. Publicity Committee. J. A. Paulhus, Chairman. Report of C. F. A. Transportation Committee. W. R. Spooner, Chairman. Appointment of Nominations and Resolutions Committees.

12.45 p.m. Recess

1.00 p.m. Luncheon at Hotel Barron. Given by Vancouver Branch C. F. A. To Delegates, Guests and their ladies.

2.30 p.m. Open Session, Convention Room, Hotel Vancouver.

"An International Council for Fishery Research in North America."—Dr. A. G. Huntsman, Biological Board of Canada, Toronto. "History of Pacific Coast Salmon Industry."—Henry Doyle, Vice-President, Northern B. C. Fisheries, Ltd. "The Work and Aims of the Publicity Division of the Federal Fisheries Department."—J. H. Conlon, Officer in Charge. "The Necessity for Standardization and Inspection of our Fish and Fish Products."—H. B. Short, Manager Maritime Fish Corporation, Digby, N. S. Discussion will follow the reading of each paper.

5.45 p.m. Recess.

6.00 p.m. Informal Private Dinner Parties at Hotels and Restaurants.

8.15 p.m. Orpheum Theatre Party. Given by Vancouver Branch C.F.A. to Delegates, Guests and their Ladies.

11.00 p.m. Stag Smoker at Navy League Auditorium To gentlemen attending the Convention.

Friday, June 4th, 1920

10.00 a.m. Open Session, Convention Room, Hotel Vancouver.

"International Treaties or State Agreements."—L. H. Darwin, State Fish Commissioner, State of Washington. "Fire Insurance as Pertaining to the Fishing Industry."—A. Z. DeLong, Managing Director, Terminal Agency, Ltd., Vancouver. "A Few Points on Marine Insurance."—B. DuBois Phillips, Manager, Dale & Co., of B. C., Vancouver. "The Workman's Compensation Law and Its Application to the Fishing and Canning Industry."—Frank W. Hinsdale, Secre-

tary Workmen's Compensation Board of B. C. Discussion will follow the reading of each paper.

11.45 a.m. Recess.

12.00 noon. Inspection of the "Home Cannery" of the Canadian Fishing Company, Ltd.

Cannery will be in full operation especially for the Visitors.

1.00 p.m. Complementary Luncheon on premises of Can. Fishing Co., Ltd. to Delegates, Guests and their Ladies.

2.30 p.m. Cruise on the New Vancouver-Built Steamship "Capilano" to Indian River and Return.

For this courtesy the Association is indebted to the Union Steamship Company of B. C.

7.00 p.m. Informal Private Dinner Parties at Hotels and Restaurants.

8.00 p.m. Open Session, Convention Room, Hotel Vancouver.

"The Value of the Fisheries College."—Professor John N. Cobb, Director College of Fisheries, Washington University, Seattle. "Fish Culture with Special Reference to the Feeding and Holding of Sockeyes."—R. E. Clanton, Master Fish Warden, State of Oregon, U. S. A. "Enemies of North Pacific Fish."—Dr. C. McLean Fraser, Professor of Biology, Vancouver. "The Fraser River Salmon Situation—Canada's position."—John P. Babcock, Assistant Commissioner of Fisheries, B. C. Government, Victoria. "Floating Equipment and Its Relation to Industry."—Walter Lambert, M.I.N.A., Hon. Naval Architect, C. F. A. Discussion will follow the reading of each paper.

Motion Pictures of the Canadian Fishing Industry will be shown during the evening through the courtesy of Dr. A. R. Baker, Chairman Game Conservation Board of B. C.

Saturday, June 5th, 1920

10.00 a.m. Open Session, Convention Room, Hotel Vancouver.

"Standardization of North American Fish Names."—Dr. A. G. Huntsman, Biological Board of Canada, Geese and the Golden Eggs" by Henry Doyle, Vice-President, Northern British Columbia Fisheries, Ltd., Vancouver. "Fish Culture."—Col. F. J. Cunningham, Chief Inspector of Fisheries, Pacific Division. Discussion will follow the reading of each paper

12.45 p.m. Recess.

1.00 p.m. Luncheon by C.F.A. Executive to Members of the Canadian Fisheries Association, Grill Room Hotel, Vancouver.

2.30 p.m. Business Session (for Members Only).

Report of Resolutions Committee. Report of Finance Committee. Discussion and Adoption. Report of Nominations Committee. Election of Officers. Where shall we hold our next Convention?

6.00 p.m. Adjourn.

7.00 p.m. Convention Banquet, Hotel Vancouver.



Officers of the Canadian Fisheries Association Elected at the Vancouver Meeting



PRESIDENT.

Alvah L. Hager, Canadian Fishing Company, Ltd.
Vancouver.

FIRST VICE PRESIDENT.

J. A. Paulhus, D. Hatton Company, Montreal.

SECOND VICE PRESIDENT.

Arthur Boutilier, National Fish Co., Ltd., Halifax.

THIRD VICE PRESIDENT.

Frank E. Burke, Wallace Fisheries, Ltd., Vancouver.

SECRETARY-TREASURER.

Frederick W. Wallace, Gardenvale, Que.



DIRECTORS AND EXECUTIVE COUNCIL.

Past Presidents:

D. J. Byrne, Montreal.
S. Y. Wilson, Halifax.
A. H. Brittain, Montreal.

Nova Scotia.

H. B. Short, Maritime Fish Corporation, Ltd., Digby.
A. Handfield Whitman, Robin, Jones and Whitman,
Limited, Halifax.
H. R. Silver, H. R. Silver, Limited, Halifax.

New Brunswick.

F. P. Loggie, A. & R. Loggie, Ltd., Loggieville.
Lewis Connors, Connors Bros., Ltd., Black's Harbor.
W. F. Leonard, Leonard Fisheries, Ltd., St. John.

Prince Edward Island.

Hon. J. McLean, Mathews and McLean, Souris, P.E.I.
J. J. Harpell Gardenvale, Que.

Quebec.

H. G. Connor, Maritime Fish Corporation, Ltd., Mon-
treal.
W. R. Spooner, Montreal.
J. T. O'Connor, Montreal.

Ontario.

F. T. James, F. T. James Co., Ltd., Toronto.
Roy Langskill, White and Co., Ltd., Toronto.
J. N. McIntosh, Ottawa.

Manitoba.

Wm. Douglas, Guest Fish Co., Ltd., Winnipeg.
J. E. Simpson, Northern Fish Co., Ltd., Selkirk.

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C. P. Rhodes, P. Burns and Co., Ltd., Calgary.

A. S. Duclos, Edmonton Cold Storage, Ltd., Edmon-
ton.

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T. H. Johnson, Canadian Fish and Cold Storage Co.
Ltd., Prince Rupert.
R. C. Gosse, Gosse-Millerd Packing Co., Ltd., Van-
couver.
J. S. Eckman, Canadian Fishing Co., Ltd., Van-
couver.
Henry Doyle, Northern B. C. Canning Co., Ltd.,
Vancouver.
H. B. Bell-Irving, H. Bell-Irving and Co., Ltd., Van-
couver.

COMMITTEES.

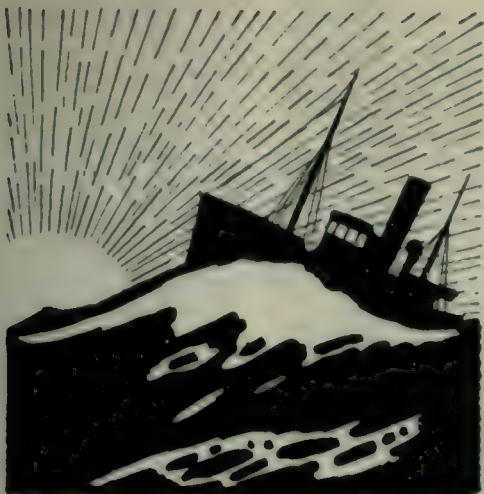
Transportation. W. R. Spooner, Chairman.

Organization and Publicity. J. J. Harpell, Chairman.

Membership. J. S. Eckman, Chairman.

Scientific. Dr. A. G. Huntsman, University of Tor-
onto, Toronto. Dr. C. McLean Fraser, Uni-
versity of British Columbia, Vancouver.





THE RESOLUTIONS

Passed by the

CONVENTION

No. 1. Standardization and Inspection of Fish Products.

WHEREAS THE DEVELOPMENT OF THE FISHERY RESOURCES OF CANADA is largely dependent upon the enhancement of the demand for Canadian fish products in foreign markets,

AND WHEREAS any movement calculated to expand the export trade of the country, particularly in finished products, is highly desirable because of its stabilizing effect on the exchange situation,

AND WHEREAS the fish products from this country entering foreign markets have to compete with goods disposed of under established standards acquired through years of actual experience and usage,

BE IT THEREFORE RESOLVED that this Association in Convention assembled respectfully request that the Dominion Government enact the necessary legislation to provide Government standardization and inspection of fish products including canned fish of all kinds for such producers and distributors as wish to avail themselves of same.

No. 2. Improvement in Refrigerator Car Facilities Desired.

WHEREAS THE MATTER OF PROVIDING ADEQUATE REFRIGERATOR CAR FACILITIES is of the greatest importance to the Fishing Industry, particularly at all points of production furthest removed from the markets,

AND WHEREAS a shortage of such facilities has for some time seriously interfered with the proper marketing of Canadian fish, especially at the Port of Prince Rupert,

BE IT THEREFORE RESOLVED that the Canadian Fisheries Association in Convention assembled requests its Executive to communicate at once with the Hon. Minister of Railways setting forth these facts and respectfully urging that he take immediate steps to provide additional refrigerator car space sufficient to take care of the needs of the Port of Prince Rupert and other shipping points.

No. 3. Changes in Regulations.

WHEREAS THERE HAVE BEEN INSTANCES OF HASTY AND ILL-ADVISED CHANGES in regulations and administration of the Fishing Industry of Canada, which changes have caused much concern and interruption to the fishing industries interested,

AND WHEREAS such changes tend to create business uncertainty and adversely affect the financing of new fishery enterprises.

BE IT THEREFORE RESOLVED that the Canadian Fisheries Association in Convention assembled respectfully request the Federal Government and Provincial Government Departments administering the fisheries, that before any regulations or changes in administration be effected the Secretary of the Canadian Fisheries Association be notified of such in good time in order that the interests affected may be advised.

No. 4. International Scientific Council For Fishery Research.

THE CANADIAN FISHERIES ASSOCIATION learns with pleasure of the action which has been taken by the Government of Canada, in accordance with the resolution passed by this Association at its Convention held at Halifax in 1918, in taking steps to arrange for a conference of scientific fishery experts from the United States, the Dominion of Canada and Newfoundland with a view to the formation of an International Fisheries Council for investigation of the waters common to these countries.

THE ASSOCIATION firmly believes that in order to secure the benefits of such work Canada must fully play her part in the general plans that may be formulated by such a council.

THE ASSOCIATION therefore desires to press upon the Government of Canada the importance of seeing that no time be lost in preparing for and beginning such work by definitely and steadily increasing the sums of money appropriated for the use of the Biological Board of Canada in developing and extending its investigations in relation to the fisheries, and also by providing, from time to time, appropriate sums of money for such special investigations, expeditions or equipment as may be found necessary for this work.

No. 5. Pan-Pacific Scientific Congress and Representation at Scientific Gatherings.

WHEREAS THE CANADIAN FISHERIES ASSOCIATION realizes the immense value to Canada of a co-operation by the nations surrounding the Pacific Ocean in a uniform scheme for the investigation of that ocean, and learns that a Pan-Pacific Scientific Congress is to meet in Honolulu in August of this year,

THE ASSOCIATION requests its Executive Council to devise ways and means for sending a scientific representative to the Congress,

AND WHEREAS THE ASSOCIATION is cognizant of the importance of its being represented at such scientific meetings and congresses as may be held in connection with fishery research and investigation,

IT HEREBY AUTHORIZES its Executive Council to take such action as it deemed best, from time to time, in sending a scientific delegate or delegates to such meetings or congresses of that character as may be held.

No. 6. Preserve Pacific Halibut Fishery.

BE IT RESOLVED THAT in view of the very great importance of conserving the halibut of the coast of British Columbia and of improving the condition of the halibut fishery,

THE CANADIAN FISHERIES ASSOCIATION respectfully recommends to the Government of Canada that an adequate sum of money be appropriated for the use of the Biological Board of Canada in carrying out at the earliest possible date a thorough scientific investigation of the deep-sea fishing grounds of the Pacific Coast with the object of discovering the life history of the halibut and of opening up new fisheries.

No. 7. Fishery Schools.

WHEREAS the various operations that have to do with the harvesting and preservation of the fishery resources of this country, as well as the preparation, packing and distribution of fish products require an ever increasing knowledge on the part of those engaged in the fishing industry.

AND WHEREAS the ever increasing complexity of our social system requires a corresponding increase in the training of our young people for citizenship,

AND WHEREAS the Fishing Industry has been entirely neglected in the matter of secondary education,

BE IT THEREFORE RESOLVED that the Canadian Fisheries Association in Convention assembled endorse the movement to establish fishery schools to be under the control of a Board composed of members appointed conjointly by the Government, the employers in the Industry, and the employees in the Industry,

AND THAT the Convention further endorse the proposal to the effect that such schools be financed partly by the Government and partly by the Industry.

No. 8. Halibut Treaty Amendments.

RESOLVED that the Executive of the Canadian Fisheries Association be empowered and entrusted to suggest an amendment to the proposed treaty between Canada and the United States establishing a closed season for halibut fishing by the vessels of the contracting powers in the Pacific Ocean and Coastal waters.

No. 9. Standardized Trade Names For North American Fish.

BE IT RESOLVED THAT the Canadian Fisheries Association adopts the appended list of suggested trade names for North American fish which have been approved by the Biological Board of Canada and the United States Bureau of Fisheries, and, therefore considers that these names are the only proper ones by which to designate the species indicated; and furthermore that it approves of the selection of the names SOCKEYE, COHOE, PINK and CHUM as the proper ones by which to designate the four species of Pacific salmon that go more or less ordinarily by these names, and that the decision as to the adoption of the name KING as versus the name SPRING for the species that has gone by both these names be left in the hands of the committee of the Canadian Fisheries Association and the Biological Board of Canada.

PRESENT BLUE BOOK NAME	SCIENTIFIC NAME	SUGGESTED TRADE NAME
1. Albacore	Thunnus thynnus	Tuna
2. Alewife	Pomolobus pseudoharengus and Pomolobus aestivalis	Alewife
3. Angler	Lophius piscatorius	Monkfish
4. Bass	Roccus lineatus	Striped Bass
5. Beluga	Delphinapterus leucas	Beluga
6. Black Bass	Micropterus dolomieu and Micropterus salmoides	Black Bass
7. Black Cod	Anoplopoma fimbria	Sablefish
8. Blackfish	Globicephala melas	Blackwhale
9. Blue Perch	Tautoglabrus adspersus	Cunner
10. Burbot	Lota maculosa	Burbot
11. Capelin	Mallotus villosus	Capelin
12. Carp	Cyprinus carpio	Carp
13. Catfish	Ameiurus nebulosus Ameiurus lacustris and Ictalurus punctatus	Catfish
14. Clam	Mya arenaria	Soft Clam
15. Clam	Saxidomus giganteus	Butter Clam
16. Clam	Paphia staminea	Pacific Little Neck Clam
16A. Cockle	Lunatia heros	Round Whelk
17. Cod	Gadus morhua	Cod
18. Crab	Cancer magister	Pacific Crab
19. Cusk	Brosmus brosme	Cusk
20. Dollar Fish	Poronotus triacanthus	Butterfish
21. Dulse	Rhodymenia palmata	Dulse
22. Eel	Anguilla chrysypa and Leptocephalus conger	Eel
23. Flounder	Pseudopleuronectes americanus	Flounder
24. Flounder	Limanda ferruginea	Flounder or Dab
25. Flounder	Glyptocephalus cynoglossus	Flounder or Witch
26. Fur Seal	Callorhinus ursinus	Fur Seal
27. Goldeye	Hiodon alosoides	Goldeye
28. Grayfish	Squalus acanthias and Squalus sucklii	Grayfish
29. Greyling	Coregonus williamsoni	Mountain White- fish
30. Haddock	Melanogrammus aeglefinus	Haddock
31. Hair Seal	Phoca groenlandica, Phoca foetida, Phoca vitulina, and Cystophora cristata	Hair Seal
32. Hake	Urophycis chuss and Urophycis tenuis	Hake
33. Halibut	Hippoglossus hippoglossus	Halibut
34. Herring	Clupea harengus and Clupea pallasii	Herring
35. Herring	Leucichthys (Thrissomimus) spec. var. Leucichthys eriensis, and Leucichthys (Cisco) spec. var.	Cisco
36. Launce	Ammodytes americanus	Launce
37. Lobster	Homarus americanus	Lobster
38. Lumpfish	Cyclopterus lumpus	Lumpfish
39. Mackerel	Scomber colias, Scomber scombrus, and Scomber japonicus	Mackerel
40. Maskinonge	Lucius masquinongy	Maskinonge
41. Mussel	Mytilus edulis	Sea Mussel
42. Muttonfish	Zoarces anguillar	Muttonfish
43. Octopus	Octopus psec.	Octopus
44. Oulachon	Thaleichthys pacificus	Oolichan
45. Oyster	Ostrea virginiana and Ostrea lurida	Oyster
46. Perch	Perca flavescens	Yellow Perch
47. Pickerel	Stizostedion vitreum	Pike-perch
48. Pickerel	Stizostedion canadense	Sauger
49. Pike	Lucius reticulatus, and Lucius lucius	Pike
50. Pilchard	Clupanodon caeruleus	Pilchard
51. Pollock	Pollachius virens	Pollock
52. Porpoise	Phocaena phocaena	Porpoise
53. Quahaug	Venus mercenaria	Quahaug
54. Rock Cod	Sebastes melanops, Sebastes ruberrimus, Sebastes spec., Sebasticthys sp., and Sebastes lobus sp.	Rockfish
55. Rock Cod	Gadus ogac	Cod
56. Rockweed	Fucus vesiculosus, and Ascophyllum nodosum	Rockweed
57. Rosefish	Sebastes marinus	Rosefish
58. Salmon	Salmo salar	Salmon
59. Scallop	Pecten magellanicus, and Pecten irradians	Scallop
60. Shad	Alosa sapidissima	Shad

61. Silver Hake	<i>Merluccius bilinearis</i>	Silver Whiting	67. Swordfish	<i>Xiphias gladius</i>	Swordfish
62. Skate	<i>Raja laevis</i> , <i>Raja ocellata</i> , and <i>Raja binoculata</i>	Skates and Rays	68. Tomcod	<i>Microgadus tomcod</i> , and <i>Microgadus proximus</i>	Tomcod
63. Smelt	<i>Osmerus mordax</i> , and <i>Osmerus thaleichthys</i>	Smelt	69. Trout	<i>Salveinus fontinalis</i>	Brook Trout
64. Squid	<i>Omnastrephes illicebrosa</i> , and <i>Loligo pealii</i>	Squid	70. Trout	<i>Cristivomer namaycush</i>	Lake Trout
65. Sturgeon	<i>Acipenser</i> sp., and <i>Scaphirhynchus</i> sp.	Sturgeon	71. Trout	<i>Salmo irideus</i>	Rainbow Trout
66. Sucker	<i>Catostomus catostomus</i> , and <i>Castostomus commersoni</i>	Sucker	72. Tullibee	<i>Leucichthys tullibee</i>	Tullibee
			73. Turbot	<i>Rheinhardtius hippoglossoides</i>	Greenland Halibut
			74. Whitefish	<i>Coregonus</i> sp.	Whitefish
			75. Winkle	<i>Littorina litorea</i>	Winkle

Delegates and Guests who Attended the Convention

- A. L. Amiel, Amiel Ice Co., Vancouver, B.C.
 C. G. Athans, Pacific Coast Fish and Oyster Co., 3732-5th Ave., W. Vancouver.
 A. S. Arkloy, Vancouver.
 Jas. Anderson, St. Mungo Canning Co., New Westminster.
 W. E. Anderson, Quathiaski Canning Co., Quathiaski Cove.
 M. Desbrisay, M. Desbrisay & Co., Vancouver.
 A. H. Brittain, Maritime Fish Corp., Ltd., Montreal.
 W. D. Burdis, Sec. B.C. Cannery Assn., Vancouver, B.C.
 H. J. Biggar, Amer. Can. Co., Vancouver, B.C.
 John Barnsley, Union Steamship Co., Vancouver, B.C.
 T. Stewart Brand, Dodwell & Co., Ltd.,
 G. A. Birks, Birks, Crawford & Co., Vancouver, B.C.
 H. B. Bell-Irving, Anglo British Columbia Packing Co., Vancouver.
 William Beck, Vancouver.
 F. E. Burke, Wallace Fisheries Ltd., Vancouver, B.C.
 Geo. A. Beattie, Van. Is. Fish & Cold Storage, Nanaimo, B.C.
 Chas. H. Black, Jr., Sunny Point Packing Co., Seattle, Wash.
 J. L. Beckwith, Clayoquot Sound Canning Co., Ltd., Victoria.
 Geo. A. Buttmer, R. V. Winch & Co., Ltd., Vancouver, B.C.
 D. W. Branch, Libby McNeill & Libby, Seattle, Wash.
 F. H. Cunningham, Fisheries Dept. for B.C., Vancouver, B.C.
 G. Crawford, Birks Crawford Co., Vancouver, B.C.
 Chas. C. Coppin, Haig Fisheries, Vancouver, B.C.
 Jas. H. Conlon, Fisheries Dept., Ottawa, Ont.
 S. Ciccese, Jr., Everett Packing Co., Everett, Wash.
 Geo. Cassidy, Columbia Cold Storage, Steveston.
 Jos. T. O'Connor, O'Connor Fish Market, Montreal.
 Lambert Carson, Premier Fish Co., 884 Bute St., Vancouver
 Daniel Campbell, Astoria & Puget Sd. Canning Co., So., Bellingham.
 Capt. Craddock, R. V. Winch & Co., Ltd., Vancouver, B.C.
 R. E. Clanton, Fish Commission, Portland, Ore.
 A. S. Duclos, Edmonton Cold Storage, Edmonton, Alta.
 L. A. W. Doherty, Canada Steamship Lines, Montreal.
 John Dybhavn, Royal Fish Co., Prince Rupert, B.C.
 Major L. B. Douglas, Sec. Association Pacific Fisheries, Seattle, Wash.
 A. Z. DeLong, Terminal Agencies, Vancouver, B.C.
 R. J. Davis, Canadian Fishing Co., Ltd., Vancouver.
 Henry Doyle, Northern B.C. Fisheries, Ltd., Vancouver.
 Jas. S. Eckman, Can. Fishing Co., Vancouver.
 C. McLean Fraser, Biological Board of Canada, Biological Station, Nanaimo.
 G. F. Found, Vancouver, B.C.
 F. A. Fletcher, R. V. Winch & Co., Ltd., Vancouver, B.C.
 Miller Freeman, Pacific Fisherman, Seattle, Wash.
 B. W. Greer, S.S. Company, Vancouver, B.C.
 Dan. Groves, Kildala Packing Company Ltd., Vancouver, B.C.
 Robt. C. Gosse, Gosse Millard Packing Co., Ltd., Vancouver.
 J. Guest, T. Eaton & Co., Winnipeg.
 S. H. Grey, Pacific Fisherman, Seattle, Wash.
 C. F. Gooderich, Chicago Fishery & Packing Co., Victoria.
 R. H. Gale, Mayor City Vancouver, Vancouver, B.C.
 F. A. Gosse, Harry Hall & Co., Ltd., Vancouver, B.C.
 F. J. Hayward, Vancouver, B.C.
 A. H. Hutchison, University of B.C., Vancouver.
 J. J. Harpell, Canadian Fisherman, Gardenvale, Que.
 Hy. A. Hunter, "Canadian Grocer," Vancouver, B.C.
 Dr. Huntsman, Toronto, Ont.
 Wm. D. Hass, New England Fish Co., Seattle, Wash.
 L. E. Harbur, Van. Ice & Cold Storage Co., Vancouver.
 C. B. Hall, Terminal Agency Ltd., Vancouver.
 F. W. Hinsdale, Sec. Comp. Board, Vancouver, B.C.
 A. L. Hager, Can. Fishing Co., Vancouver, B.C.
 Innes Hopkins, B.C. Marine, Vancouver, B.C.
 Edward H. Hamlin, E. H. Hamlin Co., Seattle, Wash.
 Arthur Irish, C. E. Disher and Co., Ltd., Vancouver.
 H. Bell Irving, A.B.C. Packing Co., Vancouver, B.C.
 Harry L. Ives, Victoria Fishery Co., Vancouver, B.C.
 Frank James, F. T. James St., Toronto, Ont.
 W. Johncox, London Fish Co., Ltd., Vancouver, B.C.
 C. Julian, Thomas-Julian Fisheries Ltd., Vancouver, B.C.
 Victor F. Johncox, Rendezvous Fisheries Ltd., Rendezvous Island, B.C.
 Edward Lipsett, Vancouver.
 C. F. Moe, Superior Fish Co., Seattle, Wash.
 F. D. Mathers, Gosse Millard Packing Co., Vancouver, B.C.
 J. O. Morris, Nootka Packing Co., Vancouver, B.C.
 Geo. I. Myers, Seattle, Wash.
 F. Mills, Can. Fish & Cold Storage Co., Vancouver, B.C.
 Francis Millard, Gosse-Millard Packing Co., Ltd., Vancouver, B.C.
 C. D. Mackenzie, Vancouver, B. C.
 Adrian Joseph Moyls, Anderson & Miskin, Vancouver,
 J. A. Motherwell, Dept. of Fisheries, New Westminster.
 J. N. McIntosh, Ottawa, Ont.
 W. Y. McCarter, National Fish Co., Victoria, B.C.
 A.S. McLean, Western Packers Ltd., Vancouver, B.C.
 G. W. Nickerson, Prince Rupert.
 H. G. O'Loane, O'Loane, Kieley & Co., Vancouver, B.C.
 J. A. Pauhus, D. Hatton Co., Montreal.
 B. G. de B. Phillips, Dale & Co., Vancouver, B.C.
 Hon. T. D. Pattullo, Victoria.
 W. P. Powell, Dodwell & Co., Ltd., Vancouver, B.C.
 F. E. Payson, Canadian Fisherman, Vancouver, B.C.
 R. R. Payne, Can. Fishing Co., Ltd., Vancouver, B.C.
 T. H. Rand, Balfour, Guthrie & Co., Vancouver, B.C.
 John E. Rice, Lummi Bay Packing Co., Bellingham, Wash.
 J. M. Rudd, Nanaimo Cannery & Packers, Nanaimo, B.C..
 A. Robertson, Harrison Lake Hatchery, B.C.
 J. A. Rodd, Supt. Fish Culture, Ottawa, Ont.
 C. M. Robertson, Imp. Oil Co., Vancouver, B.C.
 F. M. Ryder, United States Consul-General, Vancouver, B.C.
 Wm. Schlader, McInnes Fish Co., Ltd., Edmonton, Alta.
 E. Victor Smith, University of Washington, Seattle.
 R. G. Scott, Scott Fishing Co., Ltd., Vancouver, B.C.
 Geo. H. St. Denis, Can. Fish and Cold Storage Co., Ltd., Vancouver, B.C.
 J. S. Strang, Gosse-Millard Packing Co., Ltd., Vancouver,
 Hon W. Sloan, Commissioner of Fisheries, Victoria, B.C.
 A. W. Sterrett, Canadian Fishing Co., Ltd., Vancouver, B.C.
 Carl D. Shoemaker, State of Oregon Fish Commissioner, Portland, Ore.
 Wm. Steiner, L. Perrin and Co., Vancouver, B.C.
 Frank C. Smith, B.C. Printing and Litho Co., Vancouver, B.C.
 William G. Scott, Vancouver, B.C.
 James F. Twohy, Sunny Point Packing Co., Seattle, Wash.
 G. G. Taylor, Insp. of Fisheries, Nanaimo, B.C.
 I. M. Vince, Barclay Snd. Fisheries, Ltd., Vancouver, B.C.
 A. H. Watkins, W. A. Ward & Co., Ltd., Vancouver, B.C.
 Arthur N. Whitman, A. N. Whitman, Ltd., Halifax, N.S.
 John E. Watson, Watson Bros., Pkg. & Fishing Co., Vancouver.
 F. J. Warren, Winnipeg, Man.
 W. J. Wright, Seattle, Wash.
 Chas. Winch, R. V. Winch & Co., Vancouver, B.C.
 Frank Wright, Carlisle Packing Co., Seattle, Wash.
 James White, Commission of Conservation, Ottawa, Ont.
 F. W. Wallace, Canadian Fisherman, Montreal, Que.
 W. A. Webb, Vancouver, B.C.
 Alfred Wallace, Wallace Shipyards, Vancouver, B.C.
 P. Wallace, Wallace Fisheries Ltd., Vancouver, B.C.
 John M. Whitehead, B.C. Packers Assn., Vancouver, B.C.
 A number of delegates and guests did not register. In addition to the above were the wives of the delegates and guests.



Report of the Fourth Convention of the Canadian Fisheries Association

Held at Vancouver, B.C., Thursday, Friday and
Saturday, June Third, Fourth and Fifth,
Nineteen Twenty

The Fourth Convention of the Canadian Fisheries Association was held in Vancouver twenty-two months after the previous Convention held in Halifax in August 1918. A large and representative attendance gathered in the Grill Room of the Hotel Vancouver on the morning of June 3rd, and at 10 a.m. President A. H. Brittain of Montreal took the chair. With him at the Chairman's table were National Secretary F. W. Wallace, Vice-President A. L. Hager of Vancouver, Second Vice-President J. A. Paulhus of Montreal, Chairman F. E. Burke of the Vancouver Branch, C.F.A., Hon. William Sloan, Commissioner of Fisheries for B.C., Hon. T. D. Pattullo, Minister of Lands for B.C., and His Worship Mayor Gale of Vancouver.

PRESIDENT A. H. BRITTAIN called the meeting to order at 10 a.m. "Gentlemen! In calling the first session of our Convention to order, it is with great pleasure that I am able to announce that we have with us the Hon. Mr. Sloan, Provincial Commissioner of Fisheries, His Worship Mayor Gale of Vancouver, and the Hon. Mr. Pattullo, Minister of Lands; and I am going to ask the Hon. Mr. Sloan to open the proceedings by welcoming the members and guests. (Applause.)

THE HONORABLE WILLIAM SLOAN: Mr. Chairman and Gentlemen: I am pleased indeed as Commissioner of Fisheries for the Province to be accorded the privilege of saying a few words this morning to the delegates of the Fourth Convention of the Canadian Fisheries Association. My view will be expressive of some of the matters of importance to the fishing industry of British Columbia. Before doing so, I wish to offer a word of welcome to the delegates assembled here this morning. We are pleased to welcome delegates from other parts of the Dominion. Those of you who have visited British Columbia before have your hearts in British Columbia. Those of you who are here for the first time will understand why we believe that this Province is destined to take a first place. We also welcome the delegates from the Republic to the south. They are here to give counsel and consideration to the vital problems affecting the depletion of our fisheries, and at the same time, conservation of our resources. Whatever conclusions you reach you will rest assured not all will agree with those conclusions. I am satisfied, however, that whatever conclusion you reach will be for the good of the present and future generations.

British Columbia Premier Fishing Province.

British Columbia is the premier fishing province of this Dominion. During the last decade we produced over forty per cent. of the fishery products of this Dominion. For the last year for which we have reports, the fishery product of this province totalled \$21,518,575, or in other words, forty per cent. of the total fishery products of the Dominion.

The Province of British Columbia is by right and by nature a great fishing province. We have seven thousand miles of coast line. We have estuaries and channels cutting into the coast line giving a further coast line of twenty thousand miles. Our interior contains many great lakes and is drained by many rivers, one of which—the Fraser—is the third largest river on the Pacific slope of America. It is an empire in itself. The Fraser River basin alone has an area of 90,903 square miles. The value of the plants, vessels, boats and apparatus used in the fisheries of British Columbia in 1918 totalled \$20,883,000. In 1919 there were caught from our waters and marketed over twenty species of food fishes, and crabs, oysters, clams and mussels were taken in commercial abundance.

British Columbia, though possessing great fisheries owes her premier rank to the wealth of her salmon fisheries. Her salmon has brought her name to the attention of more people throughout the world than any other of her products. In the last decade her salmon products have annually netted from ten millions to sixteen millions of dollars. Since canning first begun in 1876 she has produced a total of 26,800,000 cases, containing over 1,286,400 tons of one of the most nourishing foods known. Valued at but six dollars per case, the total value of her salmon pack exceeds \$160,000,000 or many times her bonded indebtedness. Up to and including 1913 the Fraser River alone produced every fourth year more sockeye salmon, the most valuable of all species of salmon, than all the other waters of the world put together.

The halibut fishery of the Pacific began in our waters. For years and until depleted these waters produced the bulk of the halibut catch of the Pacific. Depleted of halibut as our water now are, there was landed at our Ports in 1919 over 19,000,000 pounds of halibut, an amount exceeding the landing at all other ports on the coast. Our catch of herring annually exceeds one million dollars. Our whale products in 1919 exceeded those of all other Pacific states. Deep-

sea trawling from British Columbia ports has demonstrated that the deepsea fisheries of our ports are, in variety and extent, the equal of the fisheries of any sea.

Condition of B. C. Fisheries Unsatisfactory.

Possessing as we do such valuable fisheries, the Province of British Columbia is interested in the maintenance of these fisheries. It is a life question with the Province of British Columbia. We are not altogether satisfied with the condition of these fisheries. On the contrary, we are greatly concerned as to the future of our halibut and salmon fisheries in the Province of British Columbia. We have witnessed with dismay the destruction of the salmon fisheries in British Columbia—the greatest in the world. We have also witnessed the appalling depletion of the halibut industry.

When British Columbia entered the Confederation I do not think it was understood by those responsible for the entry of this colony into the Confederation that they were going to turn the control of their fisheries over to the Dominion Government. Under the terms of union with the Dominion, Canada assumed certain obligations, Section 5, sub-section (2) of the Terms of Union clearly set out that Canada would pay the costs incidental to our fisheries; and the people of British Columbia at that time were satisfied that Canada in assuming that obligation did not realize that Canada intended to take over and administer the fisheries of this Province; and naturally that power vested in the Province of British Columbia. At that time it is true that the people of British Columbia did not realize the value of these fisheries. But I want to point out that the belief that the people entertained at that time was not well founded. It was a "joker" in the Terms of Union. Section 10 clearly sets out that in the British North America Act, that the colony of British Columbia shall enter and be subject to the same terms and conditions as if the colony had joined the confederation at the time of Union. If you will look at the British North America Act, Section 31, you will find set out the exclusive powers of the Dominion of Canada; and sub-section (12) states that it shall be the sea coast and inland fisheries. That question of jurisdiction has more or less been one of conflict between the Provincial and Dominion governments for some time, and in 1912, a suit known as the "Attorney-General of British Columbia versus the Attorney-General of Canada" was referred to the Supreme Court of Canada, and the decision of the Supreme Court of Canada was based on what I have just quoted. The substance of that judgment was that the Dominion had exclusive control in regard to regulations, that the right to fish in the waters of British Columbia was a public right, subject to control by the Dominion Government.

Extinction and Depletion Threatened.

Now, sir, as the years go by we realize more and more that while we expected to get encouragement and protection of our fisheries, we realize that instead of protection and encouragement we are faced now with extinction and depletion of our fisheries. And least of all, sir, did we ever think or contemplate that the Dominion Government, in assuming the obligation for the care and encouragement of our fisheries, that they were going to tax our fishermen to meet that obligation. The decision I have referred to sets out that the Dominion Government has exclusive control of the fisheries of this province. On the other hand, there was

no rights of property ever passed from the Province to the Dominion, and whatever rights were vested in the Province at the time of Confederation are still in effect today.

We shall soon have to protect the salmon interests of British Columbia, or else there will be nothing left to protect. It is not charged that the Dominion Government is wholly responsible for the depletion and destruction of the great salmon fisheries of British Columbia. Canada failed because she had no control of the waters over to the south, where large sockeye were caught. She failed because the United States would not enter into any treaty arrangement to pro-



HON. WILLIAM SLOAN,
Commissioner of Fisheries for B. C.

tect the salmon runs of the Fraser River. The Treaty was signed by Great Britain on behalf of Canada, and by the President of the United States in the year 1907. That Treaty was rejected by the United States Senate. Not long ago we had another full and exhaustive investigation in to the fisheries question, what is known as the International Fisheries Convention and a treaty was signed in 1919 and presented to the United States Senate. That treaty did not go far enough, and would not have had the effect of rehabilitating us. We have not yet been permitted to see the terms of the new draft. But unless it is materially different and goes much further than the original draft, it will have no effect. Our experience in draft treaties with the United States has been of such character as to give us not much confidence that United States Senate will give concurrence to any treaty that will be an effective instrument in safeguarding our fisheries. Unless there is a joint and uniform system

of regulation with regard to the Fraser River salmon fisheries, those fisheries never will be recovered.

Dominion Government Apathetic.

As to the conservation of our fisheries I claim that the attitude of the Dominion Government has been more or less apathetic and indifferent. I claim that the Dominion Government is responsible for the depletion of halibut within our shores. We also claim that they are responsible for the reduction of the salmon fisheries in the neighborhood of Vancouver Island and inland coast waters. Our halibut banks were depleted particularly at Dixon's Entrance by foreigners. They carried on operations there without regard for the spawning season. These waters were invaded by fishermen of the United States, because Canada had no effective control over those waters. It is not claimed that the Dominion Government had any desire to deplete our fisheries. It has been the failure to comprehend conditions as they exist in British Columbia. The present policy pursued by the present Government will surely result in the depletion of our waters. It should be the policy of any government to prevent depletion, and to arrange for replenishing the supply and increasing that supply. But the policy encouraged at the present time is to encourage depletion. Too heavy a drain has been made on the fisheries of British Columbia. We have over-fished the waters of British Columbia, and the time has come for a complete and radical change of policy in this province. To further deplete the fisheries of British Columbia will be an economic crime. It is time the Dominion Government viewed this question as we view it. Commission after commission has been appointed by the Dominion Government to look into the fisheries question of British Columbia. There have been tabled exhaustive reports in regard to these fisheries. They have pointed out the destructive conditions that prevail, but in the main these reports have been tabled, and very little has been done in regard to the recommendations contained in these reports.

New Administration Policy Required.

The fish of this Province belongs to the people of this province and the people of Canada. It constitutes one of our greatest national assets that will last for all time if properly conserved. It will outlast our forests and mines. Depleted runs can be improved, and it is time for a thorough and complete radical change of policy. We must cut out useless competition, over-fishing, and cut out waste and over equipment in the interest of fishing. I maintain, sir, that the time has come when the Dominion Government should step in and administer the fisheries for the benefit of the people, or failing that, to turn over the right of the administration to the people of British Columbia where it rightfully belongs. There is no inherent difficulty in the adoption of a policy of government operation. Existing interests have no operating rights beyond those granted from year to year. The Government is under no obligation to renew those rights. They should take over the control of the whole industry, and while it might mean compensation in some cases, I don't know that compensation could properly be asked for in the Fraser River. If I had a cannery in the Fraser River just now, I would view it as a liability, and not as an asset, and I believe that that condition will prevail in other parts if the present conditions are allowed to go on. The Dominion Government should turn the fisheries

over to this province. There can be no doubt that the Province is better able and more efficiently able to handle the administration of the fisheries. With Ottawa 2,800 miles away, it is like long range shooting, it is not always effective. British Columbia can administer her fisheries as well as she can administer her mines forests and lands. The Dominion Government has turned over the administration of shell fisheries to British Columbia. It has turned over the administration of harbors to a Board. The fisheries of British Columbia are more complex and harder to manage than the harbors of British Columbia. If this Province were given control of the fisheries they would build up these depleted fisheries. They see the decline in the fisheries of British Columbia, and know the reason for it. British Columbia is not interested in the fishing conditions in the East. West is not East, and East is not West. You do not have to make thousands of miles journey to get your grievances righted. We are here on the job; we are approachable and accessible. They are Provincial, and not Dominion questions. The fisheries should be handled by the government that is familiar with all the conditions. We have the most extensive coast line of any province in the Dominion, or as a matter of fact, of any state in America, and the Government that is familiar with all these conditions is the Province of British Columbia. I maintain that the authority to handle the fisheries industry of this Province is the Province of British Columbia. Thank you, gentlemen." (Applause.)

PRESIDENT BRITAIN: "Gentlemen; I am sure we are indebted to the Hon. Mr. Sloan for the welcome he has given us, and for the very excellent way he has brought out the facts of the case for your provincial fisheries before this convention. It is now my pleasure to call upon His Worship Mayor Gale, who will also extend a welcome to this delegation."

Mayor Gale Welcomes Delegates and Guests.

MAYOR GALE: "Mr. President, Mr. Sloan and Gentlemen: It is not necessary for me to say that I am indeed pleased of the opportunity to be here this morning to say a word of welcome to you on behalf of the citizens whom it is my privilege to represent. I am pleased of the opportunity for two reasons: first because as British Columbians, as Vancouverites, they are always glad to gather together in this city, with men from various parts of Canada and from various parts of the United States. I merely make that statement to remind you of the fact that if we are anything in British Columbia, we are generous. We are always glad to have you here in order that you may enjoy as we do from day to day the wonderful benefits of this wonderful Northwest (applause). I am pleased also to be here because of the fact that this convention represents men who throughout the Dominion of Canada are doing the thing we are told we must strive to do, first and last and always, and particularly at this time, and that is PRODUCE. We realize that we have in Canada as one of our natural resources the fishing industry; and it is a source of satisfaction to those of us in British Columbia who as Mr. Sloan has pointed out understand that one of our greatest assets is the fishing industry: that you can come together from various parts of the country to devise ways and means as to the best handling of this industry, and to get the most out of it in a sane and businesslike manner."

I know that I speak for the citizens of Vancouver when I say that you have the very best wishes of all of the citizens. I know that I speak for them when I say that it will be my desire that you should have perhaps during the days of this convention, the time of your life, if I may put it that way. Knowing the gentlemen connected with the fishing industry in Vancouver, and particularly those who sit with me around the head table this morning, it would not be possible for me to do, as I have had to do from time to time, and extend to you the absolute freedom of the city. I must, as you can well understand, safeguard the interests of our citizens at all times; and knowing the fishermen of Vancouver, and as I look over the audience, the fishermen throughout Canada, there must be some reservation in extending such freedom (applause). I can assure you gentlemen further, that arrangements have been made so that you can almost go the limit without any fear of incarceration."

DELEGATE: What about the eight ounces?

MAYOR GALE: "I was just going to refer to the eight ounces. I am not sure that the Provincial Government were advised of the date of your convention; but it is rather disconcerting, the day before you came here, the quantity is reduced from 12 to 16 to eight ounces."

Now, Mr. Chairman, you have a lengthy programme before you, and I want to say that the citizens of Vancouver appreciate very much the very excellent programme that has been arranged by the gentlemen of the fishing industry in Vancouver; and we feel that by the time you have left our city and got through with your convention that perhaps you will pass a resolution, and it would please us very much if you did, that the City of Vancouver should be chosen as the permanent place for conventions in Canada (applause.)

I am glad you have chosen Vancouver for your convention this year, and sincerely hope that you will have a most enjoyable time, and also hope that you will come here just as often as you choose. The city is yours, the lid is off, and you can enjoy the city just as far as you can go!" (applause.)

PRESIDENT BRITTAIN: "I am sure the last few words spoken by His Worship the Mayor of Vancouver, guarantees that no other, no better welcome could be tendered to the members of the Canadian Fisheries Association than we have received from him."

I find the next item on our programme this morning is a welcome to delegates and guests from our friend, Mr. F. E. Burke, on behalf of the Vancouver Branch of the Canadian Fisheries Association. This is purely a formality, because Mr. Burke has up to the present

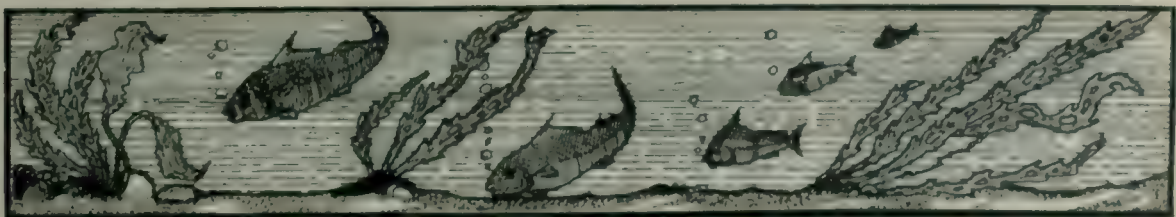
been most hospitable personally, and his welcome at the present time is merely saying formally what he and others have been doing personally."

MR. F. E. BURKE: "Mr. Chairman and Gentlemen: You heard our President, Mr. Brittain say that anything I would say is purely formal, therefore anything I shall have to say will be very short. I feel that those of us who are members of the Vancouver Branch of the Canadian Fisheries Association must feel satisfied with ourselves this morning when we look around and see the number of people we have present, especially when we see the number of people from the East. Those of us who are in the business realize what it means to you gentlemen to come from the Atlantic coast and travel three thousand miles to attend this convention. We appreciate the fact that the Canadian Fishery interest must be perhaps even closer to you than it is to us. We do not go East because we want a trip, but because we want to impress the people back there with our own view point. We simply want them to appreciate that the fishing industry and the conditions on this coast are slightly different to what they are in the East; and this convention shows that we have a viewpoint, and we want them to consider it. We want to get the idea fixed, that the conditions in the West are different from those on the Atlantic coast. I think we are entitled to feel proud with ourselves that we have the biggest individual branch, so far as members go, in the Canadian Fisheries Association; and that we grasped the idea of the value of this national association, and the fact that we could contemplate more and undertake more by connection with this Association than by connection with any individual association."

We have arranged a very full programme, and we will let it work out as it comes along. Gentlemen, we appreciate your attendance here."

PRESIDENT BRITTAIN: "We from the East especially feel that wherever the convention is to be held next year that those who have charge of it will have to go some to hold up their end with the most complete programme that has been arranged here."

This, gentlemen, completes the remarks for the opening session. The next item on our programme is the business session, for members only. Before getting to our business meeting, I want to call your attention and also that of guests and others who are not actually members of our association, to a luncheon which has been arranged for the delegates, guests and their ladies at the Hotel Barron, at 1 p.m. I will therefore, gentlemen, declare this meeting adjourned, and ask the members of the Association to remain where they are as the meeting will follow right away."





FIRST BUSINESS SESSION



President A. H. Brittain's Report

GENTLEMEN OF THE CANADIAN FISHERIES ASSOCIATION:—

It is a very great pleasure to me to realize that I am about to read our first Peace-time Report on the activities of the Canadian Fisheries Association. As you are aware, I was elected your Chief Executive in Halifax at our Convention there in August 1918. The Great War was at its climax then and, if memory serves me rightly, the Germans were making their last desperate effort to break the Allied line. Even while we were holding Convention in Halifax, German submarines were sinking fishing schooners on the Banks a few miles off the Nova Scotia Coast.

At that time we were all more or less anxious and unsettled, and while we had no doubt as to the final outcome of the struggle, yet all of us in our particular business felt that there was no bottom to things and we never knew what the next day would bring forth. The general fishing industry of the country were doing very well owing to the increased demand for food-stuffs of all kinds and fish commanded a good market owing to the scarcity of meats, but it was not a permanent market. It was artificial and not healthy. When the Armistice came in November 1918, all restrictions on meat went off and the fish trade, with large stocks on hand, especially frozen and canned stocks, were hard hit. However, these set-backs were to be expected in the wake of War and we cannot complain. At the present time conditions are as normal as can be expected and we are pinning our faith on the future, which, we feel, holds much promise for the progress and development of our great Fishing Industry.

My report, gentlemen, is going to be somewhat lengthy as I have to cover a period of some twenty-two months of Association activities, but I have no hesitation in saying that the record of our work during that period will show the great value of an Association such as ours to an industry.

The Association has about two hundred members—not a great many in figures, but when I look over the list I find we have representatives of practically every fish concern in the Dominion so that we can be truly said to represent a very large percentage of the capital invested in the Canadian fisheries. We have had a more numerous membership in the past when the fee for individuals was one dollar, but when we raised the amount to ten dollars, a large number dropped out. I have something to say on this point later.

In the important departments of Transportation and Publicity the Association has accomplished excellent work and the Chairman of these Committees—Mr. Spooner and Mr. Paulhus will render a detailed account of their activities. My remarks will be confined strictly to the work carried on by the Secretary and myself.

At our last Convention, four very important resolutions were passed, and when I took office, I determined to do everything possible to get action of the most if not all of them. We were not able to do very much

for a few months as our Secretary, Mr. F. W. Wallace was in the Government service as Superintendent of the Fish Section of the Canada Food Board, and the Association had no desire to have him leave the good work he was engaged in accomplishing for the industry in general. However, Mr. Wallace's work was closely allied to ours in many ways and we were able to consult together at least.

The first of these resolutions advocated the formation of a Scientific Council for Fishery Research by Canada, the United States and Newfoundland—this Council to carry on fishery investigations, the charting of new fishing banks, the plotting of fish migrations, etc., in the waters commonly used by all three countries contiguous to the Coasts of North America and the Inland Boundary waters. Mr. F. G. Maurice, Secretary of the Board of Fisheries of England and now President of the International Council for the Exploration of the Sea—a European organization—wrote me asking that I urge the inclusion of Canada as a member of their Council. I replied that we had definitely decided on a Council of our own which would make more intensive investigations in our own waters, but that we would be more than glad to co-operate with the European Council just as soon as our body was formed. This is one of the very important matters we want to see started at this Convention and we placed the carrying-out of this work in the very capable hands of our esteemed fellow-member, Dr. A. G. Huntsman. Dr. Huntsman will speak to the Convention on this subject personally.

A second resolution which we passed and which we believe is absolutely necessary to the development of our fisheries, was requesting that the PICKLED FISH INSPECTION ACT of 1914 be made compulsory. At that time, that was as far as we were prepared to go. We did not care to include canned fish and other products as we did not know how our Pacific friends felt about it. But in May 1919, we amplified this and asked the Government to standardize our fish grades, weights, cures, and cull and to embody a system of compulsory inspection of canned and cured fish. The Fish Inspection Act was brought before the House of Commons last year but was killed by certain members in the Fisheries Committee. It has been brought up again this session, but we have not heard what has been decided as it was referred to the Fisheries Committee again. In connection with this standardization and inspection, the Department is wholly in favor of establishing such for the improving of our fish products in home and foreign markets, but the opposition comes from certain Members of Parliament who represent fishing constituencies and who apparently think that standardization and inspection is going to affect the fishermen. I think it would be well in this Convention for us to strongly reiterate our request for Standardization and Inspection, and when papers are read on this matter by certain of our members, I would like to see this very important matter wholeheartedly endorsed by all present.

A third resolution which we passed at our former Convention was on behalf of our Ontario members and the fishermen and others who are affiliated with us. In 1917, the Ontario Government established a Government fishery on Lake Nipigon and Nipissing and organized a Fish Sales Branch to make contracts with retail fish dealers in the Province of Ontario to handle Government whitefish, trout and other species at set prices. They also made a provision in the fisherman's license that same was issued only on condition that the Government had the right to demand twenty per cent. of the fisherman's catch at any time at a price set. This whole scheme originated in the minds of a few misguided demagogues who worked on the slogan—"Cheap Ontario fish for Ontario people". It was war-time and while it hit the fisherman and the wholesale trade very hard, no action was taken by the Association other than to register a strong protest against the Ontario Government's scheme. However, on the cessation of hostilities, we felt that it was time for the Ontario Government to give up their Fish Producing and Retailing scheme and allow the business to return to the legitimate trade again. To that end, we have made personal representations to the Ontario Government and collected delegates to visit the Minister in charge of the Fisheries Branch. We have presented signed memorials urging the discontinuance of the fish producing and retailing policy of the Government and attached our reasons thereto. Our last effort was in securing a petition signed by some nine hundred Ontario fishermen and presenting same to Ontario Government and at the same time we sent copies of the petition to all members of the local legislature. We managed to secure one definite concession, namely, that the Ontario Government would not demand any part of the fishermen's catch. Though the scheme is being carried out again this summer, we have reason to believe, unofficially, that it will be discontinued next year. The work of combatting this iniquitous principle of Government operation of a producing and retailing fish business has called for a great deal of time and expense on the part of the Association, but it is a principle which affects us all and we cannot submit to Government competition in an industry which we, ourselves, had to build up slowly and surely in the face of many obstacles.

The fourth important resolution called for the reorganization of the Federal Fisheries Department with a separate Minister or, failing that, a Deputy Minister administering the Fisheries entirely. We pressed this resolution again in May 1919 when we waited on the Minister with a series of recommendations to which I will refer later. The Fisheries Department, as you are aware, is coupled with that of the Naval Service and one Deputy Minister administers both. We resent this and feel that our fishery resources and fishing industry are important enough to warrant a distinct administration under a Deputy Minister of Fisheries. Hon.

Mr. Ballantyne, we believe, favors our request and we understand he has made a statement in the House favoring the appointment of a Deputy Minister for Fisheries. We believe the uncertainty of the Government's policy with regard to a Canadian Navy has retarded matters, but I would suggest that we again go on record as desiring the appointment of a Deputy Minister of Fisheries. With a Deputy Minister and a Fisheries Department distinct and separated from Naval Service, I believe many of our difficulties in administration will be solved and, in my opinion, the

time has now come. Just think of the incongruity of the great fishing industry of this country being administered by the Department of Naval Service—especially when one compares the comparative insignificance of the Naval Service to the Fisheries.

At the Toronto National Exhibition of 1918 held from August 26th to September 7th, your Association co-operated with the Canada Food Board and the Ontario Department of Fisheries in staging a Fisheries Exhibit. The products of all branches of the Industry were displayed and stalls containing samples of canned salmon, artistically arranged, adequately featured the products of our Vancouver members. However, I am encroaching on the Report of my colleague Mr. Paulhus, and I will pass on.

In March 1919, Mr. Wallace resigned from the Canada Food Board and took up active work as our Secretary. We felt that the time had come for us to lay out a definite policy of fishery development to



A. H. BRITTAIN,

Whose Presidential Report Gave the Members an Idea of the Value of the C. F. A. to the Industry.

present to the Government and to that end we set to work drafting out a set of recommendations. These were submitted to all our members and a conference was called to meet in Ottawa on May 13th. Mr. F. E. Burke and Mr. A. W. Sterrett came as delegates from British Columbia and we had an excellent representation from all parts of Canada.

We met the Hon. Mr. Ballantyne on May 14th and laid before him seventeen recommendations—all of which were carefully framed by the delegates as representing the views of the Industry. These recommendations were as follows:

1. The segregation of the Fisheries Department from the Naval Service.

2. The appointment of a Deputy Minister of Fisheries with a thorough knowledge of the industry and its requirements, and who shall act under the present Minister.

3. The appointment of practical and representative fish men to Advisory Boards. Four Boards representing the fisheries of the Pacific, Atlantic, Great Lakes and inland waters west of Lake Superior and east of the Rocky Mountains, are suggested. These Boards will make recommendations and advise the Department on all fishery matters in their particular spheres of industry.

4. The standardization of fish weights in cans, pack, cure and cull, also the grading of fish oil and feeds, and the inspection and branding of certification of such packs and cure by Government inspectors. Same to be embodied in Fishery Acts and made compulsory.

5. The Dominion Hydrographic Survey to produce charts for fishermen—surveying the banks and grounds and accurately plotting the soundings, the character of the bottom and tidal currents in a more comprehensive manner than on the charts now in use which are designed primarily for use of merchant ship navigators who do not require more than occasional soundings, etc., offshore and who are not interested in the character of the bottom as the liners and trawler fishermen.

6. A more comprehensive scheme of re-stocking and artificial propagation of commercial fish in inland lakes, waters and river; hatcheries to be located in convenient locations; hatchery officials to be qualified fish culturists and appointed on qualifications.

7. Fishery inspectors to be qualified and appointed on practical qualifications. Should be given special training for the districts in which they have jurisdiction.

8. A scheme of apprenticeship whereby boys of 16 can be sent to sea on fishing vessels and placed in charge of owner or skipper and trained in fishery, seamanship and navigation. Such lads to be given an annual period of naval reserve training and instructed in navigation at the expense of the Government.

9. Harbors adjacent to prolific fishing grounds to be protected by adequate breakwaters; equipped with lights, buoys and aids to navigation; facilities to be provided for the landing of fish.

10. A vessel or vessels to be fitted up for fishery investigations—preferably steam vessels equipped with trawl, drift nets and line gear. These craft to survey the fishery resources and try out new fishing grounds and to survey both Atlantic and Pacific and later on, Hudson's Bay. These vessels will keep track of the annual migrations of commercial fish.

11. A publicity Department to build up the home markets in fish and carry out propaganda similar to the Fish Section of the Canada Food Board.

12. The publication of text-books compiled by practical men on such subjects as Fish Curing, the Canning of Fish. Navigation for Fishermen, Steam Trawling, Drift Net Fishing, The Use and Repair of Motor Engines, Fish Refrigeration, Fish Life, etc. Some to be distributed free to all interested.

13. A Bureau of Fisheries Information to be established in connection with the Department of Trade and Commerce which will inform the trade of foreign markets, new methods of fishing, latest designs of fishing vessels, handling and keeping of fish, etc., etc. This Bureau should devote its energies to building up for-

eign markets and should be in close touch with Canadian representatives abroad who will collect and forward everything likely to be of interest to the Canadian fishing industry, and who will work in close co-operation with the Bureau to find markets for Canadian fish.

14. The appointment of a Fish Transportation official who will devote his attention to the securing of fair and just rates for the transportation of fish by rail or water at home and abroad. This official will investigate complaints re fish transportation; advocate improved facilities with railroads and steamship companies; equalize rates on fish to outlying points, and work for the general improvement of fish transportation.

15. A scientific and commercial investigation to be made with regard to the utilization of fish waste and encouragement to be given the establishment of plants for the rendering of same into commercial products.

16. Clearing of rivers and waters of obstruction for the purpose of opening up the natural spawning beds—particularly the salmon areas of the Pacific.

17. The rehabilitation of oyster beds and the preparation of the lobster.

Mr. Ballantyne gave us a very courteous reception and expressed his pleasure in hearing our views. He also expressed his desire to meet the Association's officers in Ottawa at least one a year to talk over things.

Now, as to carrying out these recommendations. I have already covered that of the Deputy Minister and the Segregation of the Fisheries Department and also the Standardization and Inspection of Fish Products. Recommendation No. 5 respecting the qualifications of fishery inspectors. This is being acted upon. The number of part-time fishery officers has been reduced and permanent officials are now being appointed. The Department are arranging to give all fishery officers a course of training in various phases of their work and I believe some instruction has already been given them. Speaking for the Eastern Division, our Secretary informs me that the Inspector in charge at Halifax has laid out a course of technical instruction for the officers under his jurisdiction. I presume the same is being done on this Coast and elsewhere.

Recommendations No. 9 and 12 calling for the establishment of a Publicity Bureau to carry out propaganda work similar to that carried out by the Canada Food Board, and the appointment of an official to look after the transportation of fish by rail or water at home and abroad. I am happy to state that this recommendation has been granted, and we now have a Publicity and Marketing Division in the Department of Fisheries looking after publicity and transportation. This Department is in charge of Mr. J. H. Conlon—a man well qualified for the work and who is with us at our Convention. Mr. Conlon has been working very closely with Mr. Wallace and our members and it is the policy of his Department to do so. Co-operating with us, Mr. Conlon has several good schemes underway which will benefit the Industry generally, and I would ask that you give his work the benefit of your encouragement and co-operation.

Recommendation No. 11, suggesting that a Bureau of Fisheries Information be established to advise the industry of foreign markets, new methods of fishing, etc., is, I believe, to be carried out by the Fisheries Department just as soon as they can manage it. The Division of Publicity and Marketing is doing all they

can in securing foreign markets for our fish and advising the trade. A more generous appropriation will be necessary if the Fisheries Department are going to be enabled to carry out what we have asked them, and at the present time, this does not seem to be forthcoming. The Minister of Finance has ruthlessly cut down Departmental allowances, but I believe that more revenue would come to the country with more generous appropriations for fishery development work and it might be well to have the opinion of the meeting on some points in this connection.

The other items recommended were intended as a plan for the future guidance of the Government in fisheries development as we did not look for immediate action upon them. Unless the Department of Fisheries receive a large sum of money from the Treasury for investigatory, educational, and general development work we cannot expect to see our recommendations carried out in their entirety.

Export trade and the building up of new markets for our products abroad received the earnest consideration of your Association and we kept closely in touch with the Canadian Trade Commission—supplying them with much information and making suggestions.

Co-operating with the Trade Commission and the Department of Fisheries, our official organ, the CANADIAN FISHERMAN produced three splendid Export Editions, fully illustrated and descriptive of our fisheries and printed in English, French and Spanish. These were sent to some 2,500 bona fide importers of fish products located all over the world and much good resulted thereby. The Secretary of the Association received a host of trade enquiries from abroad as a result of these Export Editions and same were passed on to the members.

In this connection, I might state, that a dozen Trade Opportunity Bulletins were compiled and issued by the Association to members engaged in Export Trade and these Bulletins contained from 250 to 300 valuable trade enquiries from importers all over the world. This was exclusive information supplied only to our members and we know that good business resulted in many cases. The bulletins themselves were valuable as a source of information as to the names, addresses, references and requirements of the foreign firms making the enquiries and some of our members made up card indexes from them for future use. The expense of publishing and mailing these Bulletins was considerable and absorbed a good proportion of our revenue but we felt that it was worth it.

As a step forward in the standardization which we strongly advocate, the Association undertook the task of standardizing the names of our Canadian fish. As you are well aware several of our fish are marketed under two and often more names. Pickerel and dore, dog-fish and grey-fish, black-cod and sable-fish, pike and jackfish are but a few instance of two names for the same fish. Also, a number of our fish are incorrectly named. The Secretary and Dr. Huntsman took this work in hand and sent out a circular to the trade all over Canada getting their ideas on a standard name. This work is now completed and Dr. Huntsman will submit to you the names finally agreed upon in Canada. The United States Bureau of Fisheries are going to co-operate with us in making these names universal throughout North America.

A very important matter in which your Association took part was the National Industrial Conference at

Ottawa on Sept. 15th, 1919. We were asked to appoint two delegates representing the employers in the Fishing industry, and Mr. A. L. Hager, as Vice-President, and myself, as President, were appointed to attend. Mr. Hager was unable to get down to Ottawa, and Secretary Wallace and myself acted on your behalf. This conference lasted a whole week and we were in constant attendance watching your interests, and while the most of the discussion centered around the manufacturers, we took a decided stand on the one thing which we felt would affect our industry—the enactment of legislation for an eight hour day and a 44 hour week. In the resolution upon this point which was proposed by Labor, they allowed that “In industries subject to seasonal and climatical conditions such as farming, logging and fishing, if it can be established upon investigation that the operation of such a law is impracticable then exemption shall be granted such industries from the operation of such law.” Finally, we concurred with the employer’s delegates that the question be investigated by a Government Commission. We were the only representatives of the employers in the Fishing Industry present and we also concurred with the manufacturers in refusing to recognize the closed shop. We admitted the right of employees to organize, but we rejected the principle of collective bargaining and felt that we should only negotiate directly with our own employees or groups of our own employees.

The matter of technical education has received much of our attention and we have been strongly advocating the establishment of Fishery Colleges on the Atlantic and the Pacific and also on the Great Lakes. Mr. Wallace, as you know, succeeded in interesting Prof. Gill, the Director of Technical Education, in the needs of the Fishing Industry and they visited the Seattle College together. I understand, the Vancouver members of our Association have a Committee formed for the purpose of endeavoring to establish a College here, and I sincerely hope that it can be accomplished. We also wish to see a College established on the Atlantic Coast, and speaking as an Atlantic man, we don’t intend to let you men get ahead of us in this matter. Prof. Cobb of the Seattle College is with us at this Convention and will address us on this very important subject. Prof. Gill has also kindly honored us with his presence. I trust I shall be able to go back East and spur my Atlantic colleagues to action by telling them that the West has made a start on a Fisheries College and that we’d better hurry up.

There have been a large number of other matters in which your Association has interested itself and which have called for much time and thought on the part of the Secretary and your Executive. One or two of these minor matters might be cited. On behalf of our Lake Erie friends we advocated that their Fishery Patrol Service be improved and we understand that this has been done. In certain Lake fisheries in Manitoba we asked for a change in the date of the fishing season and this was granted. We asked the Hon. C. C. Ballantyne to have one of the new ships of the Canadian Government Mercantile Marine named in honor of the Fishing Industry, and the 5,000 ton steamer “Canadian Fisher” building on the St. Lawrence will show people abroad that the Fishing Industry stands on a par with mining, agriculture, forestry and others, and also that our request has been granted. The improvement of retail markets has re-

ceived our attention and we brought Mr. C. V. Branch, Market Expert of the U. S. Bureau of Markets, to Montreal to examine our public markets and give us advice on fish marketing. Mr. Branch gave us much valuable information which was published in our official organ. In connection with Montreal markets, the Association urged the re-building of one of the Municipal Market buildings, and I understand this is being done. We have supplied a large amount of information about our fisheries, magazines, merchants, and others interested, at home and abroad, and the Secretary's correspondence has been heavy. In former years when reading his report, the President would enumerate the number of letters written during the year by the Secretary. Nowadays we are beyond that.

Two National Fish Days were successfully held during my term of office—one on October 31st, 1918, and the other on Nov. 11th, 1919. I think it might be well to name the date for our next National Fish Day at this Convention. However, Mr. Paulhus will speak to you on that subject.

During my term of office, I regret to record the passing away of two of our most esteemed members—Mr. Martin Monk of New Westminster and Captain Howard Anderson of Digby, Nova Scotia. Both these gentlemen were practical fish men, thoughtful, progressive and successful in business, and beloved by their friends. We miss them very much.

Our relations with the Federal Fisheries Department have been very cordial and the officials have shown every desire to co-operate with the Association and have done so in many instances within their power.

Now, I wish to say a few words on the future of the Association. I feel that I am about to give up the reins of office at the end of a period when the Association has shown that it is of real and genuine value to the Fishing Industry of this Canada of ours. Every industry, from the most insignificant to the most powerful, have their organizations which promote and look out for their interests, and the Fishing Industry will need the Association more in the future days than it realizes at present.

We have been organized since 1913 and we have done splendid work and we have done it, as it were, "on a shoe-string." Mr. Wallace, Editor of the CANADIAN FISHERMAN and well-known to you as a novelist and authority on fishery matters, has acted as our Secretary. Until March 1919, he received no remuneration for his work, and the sum he is now receiving is too small for us to expect him to devote the time he has been devoting to our affairs, when he has so many demands made upon him for literary work. The revenue we receive from fees is not enough to enable us to carry on properly and the Secretary has been forced to watch expenditures very closely. We have no office of our own and we are indebted to the President of the CANADIAN FISHERMAN publishing company for the use of their city office, telephones, and stenographers—for all of which we pay nothing. The CANADIAN FISHERMAN has also advanced us the money to pay necessary expenditures and we are under very deep obligations to Mr. Harpell, the President of the company which publishes our magazine, for these favors.

Now, gentlemen, here we are—an industry which represents sixty millions annually to the country and with an invested capital of some forty million dollars.

Our two hundred members own a considerable portion of that forty million dollars investment, and yet we are only giving the sum of ten dollars per annum to the work of the Canadian Fisheries Association—an Association which is **our** Association and which is carrying out **our** work and which is on the job to help **our** business.

Another thing is that a good many people in our Industry give too little support to the aims and objects of the Association. They never attend meetings, and they seldom answer the letters of the Secretary and myself. Now, both Mr. Wallace and I are very busy men and our time is valuable, but we have never grudged giving time to the work of the Association, but I will say this, a good many members have given neither time nor thought to the Association's affairs and have left the work to be done by a few of us. Just as long as this apathy exists, our Industry will never make much progress. The day of playing the lone hand is past. We must work together and we must make our organization a strong one—strong financially and strong in the enthusiasm of its members.

The value of our Association, or any Association for that matter, is reckoned by the amount of support, financially and morally, that the members put into it. We need a good office of our own where files of statistics, information and records can be kept, and we should have an assistant secretary to look after the correspondence and detail work which Mr. Wallace has been snowed up with. We also require funds for printing, postage, and the running of the Association and its branches. An income from fees of from \$1,500 to \$2,000 is not going to go very far these strenuous and expensive days.

We have a few members who promised to become sustaining members and share up the deficits of the Association's finances. Instead of five or six of these members we should have forty or fifty. These sustaining members will discuss ways and means for establishing your Association on a sound financial basis and they will submit their suggestions to you. I sincerely trust that their ideas will be supported enthusiastically and that we will be enabled to start out with the docks cleared for action and the assurance of enough financial support to ensure of the work being carried on properly.

In conclusion, I feel that we have good reason to be pleased with the record of the work done by the Association during the time it has been in existence. I can see many beneficial changes due to its influence and it has benefitted everybody. In saying this, I am not lauding my own personal efforts in your behalf, for as you know, the President of the Association only dictates the policy. The Secretary does the work. To Mr. Paulhus for his good work on the Publicity Committee and Mr. Spooner for his efforts on behalf of Transportation, I would commend your thanks. Also to the members of the Executive Committee and Mr. Payson, Secretary of the Vancouver Branch, who has also done much effective work for the Western members.

To my successor in office I wish him every success, and want to impress upon him the very serious importance of the duties that will devolve upon him as president of this Association because upon his shoulders to a very great extent will depend the future success of our Association.



*A. L. HAGER, Vancouver.
President, Canadian Fisheries Association.*

DISCUSSION OF PRESIDENT'S REPORT

CHAIRMAN: In connection with the increased expenditure, a good many friends of the Association took care of the funds needed. (Applause). Now that report, gentlemen, is before you to be adopted, and is open for discussion. If there is no discussion, we will pass on; but we would certainly like to hear from you.

HENRY DOYLE (Vancouver): I don't know I have any kicks to make on that report. It has been a most complete report. You certainly have put in a great deal of time and attention in connection with the affairs of the Association during the term of your office; and speaking as a member from the West, we are deeply grateful to you for it, and I know I am

only voicing the sentiments of the members from the West Coast in stating that. I have been much pleased and gratified listening to the instructive and exhaustive report you have read to us, and for my part, I want to thank you for the same.

MR. POWELL (Vancouver): "I move that that report be adopted." Seconded by Delegate Copping. Report adopted.

CHAIRMAN: "The next item we have before us, gentlemen, is the Report from the Publicity Chairman, Mr. Paulhus of Montreal. I take it that most of you gentlemen know or realize the amount of expense and time he has given to this publicity branch. I think he has given as much time to this as to his own business."

PUBLICITY COMMITTEE REPORT

(Mr. J. A. Paulhus, Chairman.)

Mr. PRESIDENT AND GENTLEMEN OF THE CANADIAN FISHERIES ASSOCIATION:—

The activities of the Publicity Committee of which I am Chairman covers a period of some twenty-two months, it being that time since our last Convention.

Until the cessation of hostilities in November 1918 and for a few months afterwards, your Publicity Committee worked closely in conjunction with the Fish Section of the Canada Food Board and quite a number of the propaganda schemes undertaken by the Board were the suggestions of your Committee.

The first important piece of Publicity work undertaken by your Committee since August 1918, was the Fisheries Exhibit at the Canadian National Exhibition, Toronto, which lasted from August 26th to September 7th 1918. In conjunction with the Canada Food Board and the Ontario Fisheries Department, your Association put up an excellent show which was very highly commented upon. The Canada Food Board held cooking demonstrations and exhibited moving pictures films of the fisheries; the Ontario Government exhibited specimens of live and frozen Ontario lake and river fish, and your Association erected a picturesque fisherman's hut from which suitable literature was distributed and also equipped and maintained exhibits of frozen, smoked, cured and canned fish, the products of Atlantic and Pacific Members. One of the features of our Exhibit which attracted great attention was a dory in which the survivors of a torpedoed fishing schooner had rowed to the land. Through the kindness of President Brittain, this dory was secured, rushed up from Canoe, N. S., and exhibited within a week of the time the schooner was sunk by the German submarine. This dory was afterwards loaned to the Navy League and was used in securing subscriptions and on the occasion of the great Victory parade in Montreal on November 11th. we had it suitably mounted on a float and entered in the procession as representative of the Canadian Fishing Industry.

In the Fall of 1918, we succeeded in getting the Canada Food Board to assist in promoting our national Fish Day. The date was set for October 31st and a most extensive advertising campaign was made for the day by the Government and the Association's members. The National Fish Day of 1918 was a whirlwind success and was celebrated from Coast to Coast and

from reliable figures it resulted in the consumption of 2,500,000 pounds of fish upon the day alone.

Another very important feature of your committee's work has been the separating of fish from Friday. It was through our efforts that the Tuesday fish day was recognized by the Food Control and made a meatless day. Tuesday is also the day upon which our Annual National Fish Day is held, and some of our members have produced calendars in which the Tuesdays are all marked as Fish Days. That this kind of propaganda has been effective is easily proved as we find that Tuesday is as good a fish day among the retail trade as Friday and fish eating is gradually spreading throughout the week.

Our last National Fish Day was held on Tuesday, November 11th, 1919, and while not the big day of the previous year when the Canada Food Board was assisting us, yet it was quite an event and excellent publicity for the home fish trade. The Association distributed 100,000 posters suitably printed in English and French to its members from Coast to Coast. Prizes for window displays were given in Vancouver and Montreal by the local members and in both cities very great interest was taken in the Fish Day. Other towns and cities throughout Canada celebrated the event and the trade advertised extensively. The Publicity Committee of the Association supplied posters free and also had press dispatches sent to newspapers throughout the Dominion for several days prior to the event.

As chairman of your Publicity Committee it was up to me to do something to justify my title. I had occasion to write a few articles, which have been published in the "dailies" also in a few magazines and commercial papers. Being a member of "la Chambre de Commerce," and the Board of Trade of Montreal, I have in many instances upheld and defended the best I could the cause of our fisheries in both of these institutions. I have also addressed meetings and delivered lectures on the subject of our industry before several associations.

When our official organ, the CANADIAN FISHERMAN undertook to produce three editions for the securing of export trade, it was my privilege to assist Mr. Wallace in the compilation and correction of the French reading matter. I was also able to assist the Secretary in translating letters which he received from France and other countries where French is spoken.

As for individual talk pertaining to Fish matters generally, I am satisfied I have done my duty. I would ask of you to relieve me of the pleasant position I have held for quite a few years believing sincerely that for the good of the Association my successor should be chosen at the present convention.

Our Secretary Mr. F. W. Wallace assisted the objects of the Publicity Committee by loaning his moving picture films of deep sea fishing to various institutions and gave personal lectures at several gatherings. He also wrote many articles on Canada's fisheries, fishing industry, and fish as a food to such magazines as "The Grain Grower's Guide" "The By-Water Magazine" "The Journal of the Canadian Bankers Association" "The Sailor" and several newspapers. A second edition of his novel dealing with our fishing industry "Blue Water" is now on the book stalls and a new book in which our fisheries play a prominent part will be published this Fall. I do not mean to imply that these books are produced under the auspices of my Committee, but they are at least produced by a member of it and will have a beneficial effect in turning the attention of the public to the romance and commercial possibilities connected with our great and growing fishing industry.

I am happy to announce that we now have a Government Department devoted to Fisheries Publicity work in charge of a very bright and capable young man. But this does not mean that the work of your Publicity Committee is ended. Rather, it means that our work is only beginning. It is absolutely essential that the Association co-operate with the Government Department in their plans and that they co-operate in ours, I believe that is the intention anyway.

Publicity is the very life-blood of our Industry and publicity work demands more of our thought and effort than anything else. It takes publicity and education to sell our goods, more in the case of fish than anything I know of. We have to educate our public to eat more of the varieties of fish we produce a great deal of and get them educated out of demanding but one or two varieties. We must keep hammering away at the economy of fish as a food, we must combat prejudice by education and never lose an opportunity to bring fish to the fore; we must be quick to correct erroneous and lying reports regarding profiteering, holding of fish in storage, and the dumping of condemned fish. The latter action is often used by the Press to stampede the public and I have had occasion to give out public statements explaining the cause of dumping and to show that it was not the fault of our industry. In addition to educating the consumer, we have to educate the retailer to handle fish in an attractive and sanitary manner, to go in for window displays and to advertise his product. We have also to educate the fishermen to use care in handling fish, to eliminate forking and to get his product on to the ice or preservation as quickly as possible.

I could talk in this strain for an indefinite period, but I feel, amidst this congress of practical men, that you are all aware of the benefits of publicity. But publicity to be effective must be carried out properly. The co-operation of every member is required when any of our plans are outlined and we must do more general advertising both individually and as an Association. The Association itself could handle a general advertising campaign very effectively in various

ways, but funds are required to do it. When you are asked to consider the suggestions of the finance committee, I trust you will consider the value of the Association in publicity work to you and the industry as a whole.

In conclusion, I wish to express my sincere appreciation to our President for much assistance, financially and morally; to Mr. F. E. Payson of the Vancouver Branch, and to Messrs. Captain F. W. Wallace, J. J. Harpell both of Montreal, H. W. Thompson Toronto, T. W. C. Binns Ottawa, I owe a tribute of gratitude for other painstaking and persevering work.

All these gentlemen deserve the highest praise for their loyalty to the cause.

DISCUSSIONS AND OTHER BUSINESS

MR. F. E. BURKE (Vancouver): "Mr. Chairman, I would like to move the adoption of Mr. Paulhus' report. I think we all realize the importance of some of the facts that he has mentioned."

MR. VINCE (Vancouver): Seconds. Adopted.

CHAIRMAN: Gentlemen, we have the Nominations Finance and Resolutions Committee to name. Might I be permitted to make the suggestion that Mr. J. J. Harpell act as Chairman of the Resolutions Committee; Mr. Hager as Chairman of Finance, and myself, as retiring president, as Chairman of the Nominations Committee. I think, perhaps, I am in a position to guide the committee in connection with some names that it might be advisable for us to have for the succeeding year. Is it your pleasure, gentlemen, that these chairmen be adopted, or have you others to suggest? If so, we would like to have them suggested so we may present them to the meeting. While the Chairman of the Nominations Committee is myself, I would appreciate any names which you may wish to add.

Moved by Mr. Burke and seconded by Mr. Powell. Adopted.

CHAIRMAN: In connection with the report of the Transportation Committee, Mr. Spooner, as you are all aware, is chairman; but as you have already been advised, Mr. Spooner was taken ill and is unable to be with us. In fact he was unable to finish that report, but it will be completed and published in THE CANADIAN FISHERMAN. Your attention is directed to that report when it is published. We haven't asked for things that are unreasonable. Some good work has been done, so I would commend to you the reports of the transportation committee when it appears in the official organ **The Canadian Fisherman**."

MR. DESBRISAY: I think it would be appropriate if we sent a telegram to Mr. Spooner expressing our sympathy and expressing the hope for his speedy recovery.

CHAIRMAN: "We have a few telegrams here this morning which I might ask the secretary to read to you."

Telegram from the Honorable The Minister of Fisheries, Newfoundland read:

St. Johns, Nfld.

Canadian Fisheries Association,
Vancouver.

Deeply regret inability to be with you at conference owing to Legislature in session. Newfoundland Government will participate conference United States Canadian and Newfoundland Governments in October

to consider scientific investigation fisheries. We desire to work hand in hand with Canada in matters pertaining to Atlantic Fisheries. We have just prepared legislation dealing with standardization of codfish and regulation of codfish export in an endeavor to cut out consignments and place codfish export business on sound business basis. Consider Canada might co-operate with us in this matter. Also the experience of the past six months has shown regulation of fish export to have been beneficial. Trust deliberations conference are conducive of benefit mutual to both Dominions and the progress of the Great Empire.

W. S. Coaker,
Minister of Marine and Fisheries.

MR. HAGER: I suggest that the Secretary be instructed to make a suitable reply.

Telegram from Vice-President Arthur Boutilier, Halifax.

Telegram from T. H. Johnson, General Manager Cold Storage, Prince Rupert.

Telegram from the President of the Montreal Fish Dealers Association.

MR. HAGER: I didn't know these telegrams were going to be read here this morning. During the past two weeks I presume we have received as many as three hundred telegrams and letters from all parts of the country, and beyond this continent, wishing us every success and expressing regrets for being unable to be present. One from the Honorable Mr. Ballantyne, Minister of Fisheries, and others.

THE CHAIRMAN: There is a group photograph to be taken in front of the Court House. The ladies are invited to be present.

MR. HAGER (Vancouver): As chairman on the Committee for these different arrangements I want to say that the Vancouver Ladies are holding a reception at four o'clock this afternoon in the Hotel to meet the visiting ladies, and to get acquainted. The success of this Convention is up to our members. It is up to us to do our part. They are having tea and some refreshments, and music has been provided. They commence at four o'clock. This evening we are going to attend the Orpheum Theatre in a body, and it is only fair to the Manager who has set aside seats on

the first floor that we should know how many intend to be present.

SECRETARY WALLACE: Reads telegram of invitation from the Prince Rupert Board of Trade to visit Prince Rupert.

DELEGATE DYBHAVN FROM PRINCE RUPERT: We are anxious that as many as possible will take that trip via Prince Rupert on your way home, and we will do all we can to show you around and entertain you. It is also our desire to know as soon as possible how many of you will take advantage of this, in order that we may advise our people. I think it would be more fitting if some of our Vancouver friends would make it a point to join us in that trip to Prince Rupert. I may mention the intention is to leave at eight o'clock on Monday night by the old time, and arrive in Prince Rupert Wednesday afternoon. The intention is to spend Wednesday, Thursday and Friday there, and leave on the Saturday morning train."

DELEGATE NICKERSON, PRINCE RUPERT: "I am sure we would be delighted to have as many members from the East as well as from Vancouver as can possibly make the trip."

MR. HAGER: "Might I supplement the remarks of the two previous speakers: When the section of the Vancouver branch which was voted as Finance Committee to raise the necessary funds to carry on our work in connection with this Convention in order to make it a success, we took up with Mr. Johnson, and suggested some financial assistance, and thought probably the Prince Rupert people might feel they were overlooked if they were not given an opportunity of subscribing. I went up to Prince Rupert and met Messrs. Johnson and Nichols, and they seemed to think it was a Vancouver affair. I assured them it was not. I told them it was a British Columbia affair, when they very kindly remarked they would be very pleased to do all they could to assist us. Mr. Johnson gave a very substantial donation to the Vancouver Branch to assist in paying our expenses.

—Morning session adjourned at 12-45 P.M.

—Luncheon at Hotel Barron given by Vancouver Branch Canadian Fisheries Association to delegates, guests and their ladies.

Thursday Afternoon Session

2 30 P.M. OPEN SESSION, Convention Room, Hotel Vancouver; President A. H. Brittain
in the Chair

CHAIRMAN: We will now come to order gentlemen. We have with us Dr. A. G. Huntsman, of the Biological Board of Canada, Toronto, who has an interesting paper to put before us, entitled "An International Council for Fishery Research in North America."

DR. HUNTSMAN: Mr. President and Gentlemen, there is little necessity for me to press the main point of this subject, as the Association passed a resolution at the Halifax Meeting in favor of this matter. I yet desire to discuss the question with you from different aspects, because it is not seriously to be expected that you or anybody else will fully realize all that may be involved, and if it is dealt with from the scientific standpoint, it may make the matter somewhat clearer to you.

International Investigation of the Ocean

Dr. A. G. HUNTSMAN, Biological Board of Canada

In the history of discovery and exploration of the world by the white races of Europe, the seas have played a major role. It was they that furnished the ready means of transport by which alone profitable commerce with distant countries was made possible. It seems fitting therefore that the ocean which has not only led to the foundation of nations, but which is the chief bond connecting many of the nations should be the object of international investigation.

The earlier investigation was of the nature of discovery and surveying—the charting of the seas. That has been of prime importance in the development of their use of transport, but in later years there has come into prominence the importance of learning the fundamental facts concerning the resources they contain. How can we utilize these resources to the full and yet not squander our heritage? There is only one road to the correct answer to this question, and that is the road of knowledge, a difficult road to travel.

Our first endeavor should be to ascertain the extent of these resources, for only in this way can we know in what direction expansion of the fishing industry is most desirable. In times past it has been popular to speak of our resources as boundless, as unlimited, but he must have indeed a restricted vision, who would make that remark in faith at the present day, who cannot discern at least dimly the bounds, the limits that are set to our heritage.

Equally important with ascertaining the extent of our fishery life is the task of discovering the rate at which it is renewed. Fishes are born and grow up and fishes die constantly. If the population of large marketable fishes is changed, is renewed rapidly, as happens with the smelt and with the herring, overfishing does not readily take place, and if it does occur, recovery is rapid. On the other hand, when the large fish are replaced very slowly, the stock may easily be depleted and recovery will be slow. This is well shown with the halibut. Not only will knowledge of the life history of the fishes show in what way conservation may be effected, but it may also uncover means of greatly improving the natural recovery of a depleted fishery.

How are we to get the necessary knowledge in these directions? If we say it must be by scientific research, what do we mean? Merely this, that as many as possible of the facts bearing upon the question under consideration, not only those already obtained by man, but also new ones brought to light by investigation, must be brought together and the order among them discovered. A theory or general statement can then be formulated, by means of which reliable predictions of what will happen under given conditions can be made. This is the commonest sort of process in the learning of anything. For example, a child finds that on touching a stove it has pain, but not always. If the air near the stove feels very warm, touching the stove is painful; if the air does not feel warm, touching is without pain. Consciously or unconsciously the child forms the theory that very warm air means a hot stove and burning, and it is able

to predict when it will burn its finger and when it will not, if it touches the stove. These more or less conscious predictions govern the child's behaviour toward the stove. If this homely example is typical of the most highly developed means of obtaining knowledge that we possess, why should we dignify the latter with the name of scientific research? Although the method is the same for both, the simple situation for the child is to be contrasted with the enormously complicated situation for the research worker. The difference may be one merely of degree, but it is nevertheless extremely great.

The accumulated knowledge of the ages upon which the investigator must be able to draw is exceedingly vast, and being scattered through the literature of many nations is accessible only to the person skilled in a variety of languages. Not only this, but the new facts which may be required are in many instances obtainable only by very special and refined methods for the use of which much training may be necessary. Even if an investigator be very well acquainted with his subject, have at his command the knowledge stored in every language, and possess a training in the necessary special methods, he may still fail. He must have the native ability to work things out, and, perhaps more important than all else, he must retain the inquisitive nature and spontaneous enthusiasm of the child. How eager is the boy! How his questions come tumbling out one after the other! But development—education—changes him, and the man becomes set in habits. He is very efficient, but machine-like, to a great extent without inquisitiveness and without enthusiasm. Is it any wonder then that most of those who take a long and arduous course of education are unfit for investigation, and that the number of successful skilled investigators is so small? Those men upon whom progress depends are numerous in no country, and in some countries are entirely absent.

In these years we realize keenly the international nature of much of our trade or commerce. Our knowledge or science is no whit less international in character. This must be realized before one can understand the way in which advance is made. To the artisan, the manufacturer and the merchant with their secret methods or patented processes, which are often extremely valuable, the eagerness of the scientist to publish his discoveries broadcast without any expectation of reward is incomprehensible. The absolute necessity for team-play—for co-operation is the explanation. The illustration that comes to me is a game which I played when a child, and also since that time, and which is known as "Letters." It may be familiar to some of you. Bits of cardboard each with a letter on one side are shuffled together and placed with the letter side down, each picking out a bit of cardboard and placing it with the letter side up in front of him. The object of the game is to see which player can build up the most words. Each player can use not only the letters he turns up himself, but also those turned up by the others. If he had to depend solely upon the letters he turned up himself he would have little or no chance of making a word.

So is it in scientific research. The successful result which may prove immensely valuable to the investigator or to his country stands almost no chance of attainment unless the facts brought to light, and the discoveries made by various investigators in various countries are made available to all. Knowledge continues to increase, fact after fact is added to the common store, and the order that prevails becomes more and more clear. Then more or less suddenly from time to time some person or persons add the finishing touches, find the solution of the baffling problem, and the practical application that follows proves of immense value to the discoverer, his associates or his country and ultimately to the whole civilized world.

The game, if we may give it that name, requires many players. The nation that has no players in the game stands no chance of being the first to benefit from the advances made, nor perhaps even of being the fifth or tenth. You need only look for an example at any of the backward nations of the present day. What in the last two centuries gave Great Britain the foremost place among the nations of the world? Was it not that she had her Black, her Watt, her Stephenson and others, that is her scientists, her inventors, and her astute business men who gave to Britain the honor of being the leader in the revolution that opened up a new era of expansion and remade the industrial world. In that way the foundations of Britain's wealth and pre-eminence were firmly laid. The commanding position attained later by Germany and that being attained so rapidly now by the United States are equally to be ascribed to the team work in each country of the scientists, inventors and business men who form the spans in the bridge that leads from knowledge to wealth and prosperity. The game continues. What part will Canada play in it?

The international co-operation in science, of which we have spoken is a more or less unconscious and only slightly organized one, and it is dependent chiefly upon the interchange of ideas through scientific publications. But it has come to be recognized that this is not sufficient, and this realization has led to the holding of extensive international congresses and exhibitions, in which a still greater and freer interchange of ideas could be accomplished. Even this has not sufficed! The world is a unit and its parts interdependent and it was soon seen that many important problems could be solved only by a definitely planned scheme of investigation throughout an area belonging to or held in common by several nations and in which each nation took a definite share of the work.

Such was the basis of the movement that resulted in the early years of this century in the establishment of the Permanent International Council for the Exploration of the Sea by certain of the nations of northern Europe. The results of the work planned and carried out by and through this council have been of extremely great value indeed. Although the investigations were in large part confined to the North Sea, the results have been of such general applicability as to be of no mean importance even to us in Canada who took no part in the work. The nations that took part in the scheme were greatly stimulated to a study of the basic problems of the fisheries. An impulse was given to the collection of more extensive and more accurate statistics of the catches. The distribution of the commercial fishes and the ex-

tent of their spawning grounds were made the objects of careful investigation. New grounds were discovered and new fisheries were developed and the possibilities in connection with the transplantation of fish to more favorable feeding grounds was demonstrated.

Of the various problems carried through under the direction of the Council we may mention a few. The investigation of the physical conditions of the North Sea and of the adjacent regions demonstrated the periodical changes that affect the course of the fisheries and that determine to a certain extent the character and quantity of the catch. Certain factors of a general nature have been foreshadowed as responsible for the fluctuations in the yearly yield of the waters. Extensive foundational knowledge was obtained concerning the distribution, and the factors influencing that distribution, of the floating life of the sea, which plays the important role of furnishing food for the fishes. Certain co-operative researches were made on the life-histories of the most important food fishes of the region, such as the herring, cod, plaice and eel and signally successful results were obtained in this field. One can scarcely over-estimate the importance of this work in furnishing the basis for any policy of increased production and conservation. The published accounts of the results appeared from year to year and were very comprehensive indeed. They are indispensable for any one who desires to get at the facts concerning the various fisheries and the problems related to them.

It is almost needless to state that the activities of this council were suspended almost completely during the war, although the central laboratory at Copenhagen was continued in a modified form. In view of the great success of the council, a movement was started after the war which has resulted in the present year in the reconstitution of the council. Certain changes in membership have been inevitable. Germany is no longer in the council. Russia has naturally dropped out but Finland, formerly a part of the Russian Empire, has joined the council as a separate nation, and France has been added to the list of countries participating.

An impressive program of work was arranged at the first meeting of the council which took place at London in March. Mr. H. G. Maurice, the Secretary of the Fisheries Department of the Board of Agriculture and Fisheries in Great Britain was elected to the presidency. The scope of the investigations has been greatly extended geographically owing to the importance of a knowledge of almost the whole of the north Atlantic in settling certain of the fishery problems of Europe, and an expedition to the Sargasso Sea and to this side of the Atlantic is projected for the present year.

The United States became a member of the Council several years before the commencement of the war, but she has declined to renew her membership now. Canada, although invited to take part, never consented to become a member. I understand that neither of these adverse decisions was determined by a lack of appreciation of the great importance of the work of the council. The Canadian Fisheries Association at its last convention in 1918 passed a resolution which may well serve to outline the position that the countries on this side of the Atlantic may be supposed to have adopted. It was to the effect "that the Canadian Fisheries Association respectfully recom-

mends to the Governments of the United States, Dominion of Canada, and the Dominion of Newfoundland the formation of a permanent international scientific commission to collect scientific data, statistics of resources and production and direct surveying of fish grounds common to two or more of these countries." This means that the idea of an international council is approved, but that the work in the North Sea is only of general interest to us on this side of the Atlantic and that, therefore, an *American* council to investigate the particular problems in North American waters is what is desired. This view is strongly based upon fundamental geographical facts, and yet one should not lose sight of the importance of correlating the work done on the two sides of the Atlantic, and it is to be hoped that means will be found for attaining this end possibly through conferences between the European council and the American council, which we confidently anticipate will be formed.

The idea of co-operation in oceanic research in America is not a new one. Scientists on this continent have been no whit behind their confreres in Europe in desire, but fewness of men and the vast distances to be traversed have delayed the necessary preliminary pioneer work and have hindered the consummation of desire. A year ago a meeting of scientists was scheduled to be held in California to consider a plan for the investigation of the North Pacific ocean, and Dr. C. McLean Fraser of Departure Bay, was sent to represent the Biological Board of Canada. This month in Seattle a number of scientific societies are holding a combined symposium on North Pacific Fisheries, at which Dr. Fraser is to preside. In August of this year there is to be held in Honolulu a Pan-Pacific Scientific Congress, whose purpose is "to outline scientific problems of the Pacific Ocean region and to suggest methods for their solution." It is expected that representatives from all the following countries will attend—the United States, Canada, Japan, China, the Philippines, Australia, and New Zealand.

It has been hoped by your secretary that the formation of an international scientific fisheries council with representatives from Newfoundland, Canada and the United States might be accomplished at this convention. Action involving such large bodies of people of necessity proceeds slowly and such an outcome, therefore, has not been possible. The matter, however, is merely delayed, and it is possible to outline to you the very definite progress that has been made towards this end.

The great value that would accrue from co-operation between the countries mentioned in a scheme of scientific oceanic research is generally admitted. The Royal Canadian Institute, a body that has for over half a century been engaged in advancing science and disseminating scientific knowledge, and also the Royal Society of Canada, the premier scientific organization of the country, have both passed and forwarded to the government resolutions urging that action in this direction be taken. The Biological Board of Canada representing the scientists in this country that are interested in fisheries research and the Bureau of Fisheries for those in the United States have both gone on record as desirous for such co-operation. Also I am empowered to state that the Canadian Govern-

ment has approved of the principal of co-operation in arranging for and carrying out investigations on both our coasts and has asked the Governments of the United States and of Newfoundland if they favour the principle and if so a conference of scientific fishery experts is to be called at Ottawa during the coming autumn. It is too early to predict just what form this co-operation will take, but of the co-operation itself you may rest well assured. Thus the action taken by this Association in 1918 will have borne fruit.

It has been suggested by a member of the State Fish Commission of Massachusetts that not only the Federal Governments, but also certain states or provinces might have representatives on this council. This might be worth while if such states or provinces were actually engaged in scientific investigations.

Here we are brought face to face with the crucial facts of the situation. For co-operation to be possible each of the individual bodies must be operating or working. Where is work of the kind that is aimed at actually going on? On such work co-operation can be based. So soon as other bodies begin to work they too will be able to co-operate. This is no small matter. Scientists of the proper training and experience for this work are very few in number. To start with untrained or improperly trained men means either disaster or the lapse of a considerable time before anything is accomplished.

In dealing with this aspect of the question I must be pardoned for speaking as an easterner, my work and interest for a number of years having been practically confined to the waters of the Atlantic. Oceanic investigation is a difficult field and requires special methods. The Biological Board of Canada and the United States Bureau of Fisheries are the two bodies that have entered this field on the Atlantic Coast of America. The work in the United States has been under the direction of Dr. H. B. Bigelow, of Harvard University. Beginning in 1912 a series of cruises have been made in which much of the waters from the banks of Nova Scotia to the coast of the southern Atlantic States has been covered. In the last year the well-equipped steamer, the "Albatross," has been used to investigate the Gulf of Mexico to the south and the Gulf of Maine to the north. In Canada the Biological Board began with an investigation of the Bay of Fundy. In 1914 it brought over Dr. Hjort of Norway, who had achieved such signal success, not only in work in connection with the International Council, but also in a number of extended oceanic cruises. Under his direction a comprehensive preliminary survey was made of the Gulf of St. Lawrence and of the outer waters from Newfoundland to the lower end of Nova Scotia during the summer of 1915. I could wish to outline to you the very valuable results obtained by that expedition, the report of which appeared last year, but for that this is not the occasion. Since that time the Board has continued the work by carrying out detailed investigations of special regions from northern New Brunswick to southern Nova Scotia, the results of which it is hoped to publish at an early date.

It must be fully realized that while co-operation will make the work that is being done much more effective and will give the workers a broader vision of what they may accomplish, this is only a part of what is

needed. The goal is to be attained, but only by each one striving hard. Canada must not look to Newfoundland, or to the United States, but look ahead for herself and do all that she can. Only in that way will success be hers. Additional skilled investigators must be developed and put into service. A steadily increasing amount of money must be available to the Biological Board for expanding its work, and appropriations must be made for the special expeditions which will be necessary.

The Canadian Fisheries Association, I am sure, is prepared to use all its influence and to give all the assistance it can towards this object. There is much that you can do. Arduous work is in prospect for the scientists, how arduous you little know. You consider that the worrying over the solution of some business problem when things are not going smoothly is the hardest kind of strain on a man. The real investigator is continually in that position, and as with the business man the problems cannot be kept for consideration only within the hours even of an eight-hour day, but will come to the surface during the waking hours. Will you make an effort to appreciate his point of view, as he is trying to learn your point of view, and to let that knowledge determine the direction that his investigations shall take so that they may be useful to you? We are on the high-road to a new era in the fisheries of Canada, and co-operation is the keynote to be sounded if lasting progress is to be made.

DISCUSSION ON DR. HUNTSMAN'S ADDRESS

CHAIRMAN: I am going to call upon Mr. Doyle of Vancouver to move a vote of thanks to Dr. Huntsman for his able address.

MR. DOYLE: Mr. President, before that takes place, I would like to bring to the attention of the Convention the suggestion which Dr. Huntsman made, as indicated by the excellent address of Dr. Huntsman.—This movement which started at the last Convention has gathered considerable momentum. The difficulty is perhaps we are not all fully aware of what was done at that time. Within the next two months a good deal of the fruits of that movement will be produced. As Dr. Huntsman suggested, it might be advisable and it certainly seems to be advisable that the Association should have a representative at the scientific meeting that is to take place this summer; and from what he has said, one of our members will be taking common part in Seattle and I think it will be fitting and proper if those two men, our experts from the East and West could be present at the International gathering which is to take place in Ottawa in October. They could be there in the capacity of advisers. Because those two men are in close touch with the industry, and know the requirements of the industry from the scientific point of view. I would like to move that this Convention authorize its executive to appoint such scientific representatives to these various scientific gatherings as they see fit.

MR. HARPELL: I have pleasure in seconding that motion.

The CHAIRMAN: Mr. Doyle, will you let us have a copy of that resolution.

MR. DOYLE: That this Convention authorize its executive to appoint representatives to the various scientific gatherings which have to do with the ques-

tion of an International Scientific Commission. Would that cover what you had in mind?

DR. HUNTSMAN: The question in regard to the meeting at Honolulu is really a question of money. Scientists are not usually particularly wealthy, and it is hoped the Government of Canada will see fit to appropriate a sum of money to pay the expenses so that the most prominent scientists interested in this question can go to Honolulu. If that is agreeable to Mr. Harpell.

MR. HARPELL: I intended myself that the executive would be authorized to arrange for such facilities that would be necessary to have our representative attend those meetings. If the Government, after being approached in the matter, cannot see their way clear to provide the necessary funds, I think the Association might, and if that were left in the hands of the Executive, I think probably it would be taken care of. I had that in my mind at the time, that facilities would be provided.

The CHAIRMAN: Might I suggest that this matter be left in the hands of the Resolutions Committee, of which Mr. Harpell is Chairman, to draw up the proper resolution and submit it to the conference before we adjourn. Is that your pleasure, gentlemen?

The CHAIRMAN: If there are any gentlemen here would care to have any discussion, or ask Dr. Huntsman any question on the paper read, I am sure Dr. Huntsman would be only too pleased to reply.

MR. HAGER: Dr. Huntsman indicated in his address that representatives had been named or were about to be named to look into the question of the depletion of the Halibut supply. That is a question which we in the West are all interested in. I believe he intimated he had something to say on that subject. I personally would like to hear something along that line if he can give it to us.

DR. HUNTSMAN: My reference to that was that there was a clause in the International Fisheries Agreement that each country would contribute the sum of Fifteen Thousand dollars towards any investigation of the Halibut Fisheries of the Pacific.

MR. HAGER: That is the treaty that is now pending.

DR. HUNTSMAN: The proposal has been made to carry it on, but that was left in abeyance until this agreement should go through.

The CHAIRMAN: Can we have an expression of an opinion from some of our United States Delegates present.

J. P. BABCOCK: I understand that this treaty has been signed, and is now before the Senate; but what they intend to do with it is still a puzzle. I am unable to say, although I asked one of the Senators to see if he couldn't give us any light on the subject. I think the question will be left to the jurisdiction of the Courts in either country. So that we are unable to say what will be done, and whether any appropriation will be made or not. It looks to me as probably rather doubtful whether any of these treaties are acted upon inside of a year in any event, and it is somewhat problematical whether they ever will be. Whether they ought to be or not, I think we

are all agreed something has to be done, but whether we have gone about it in the right way or not is still a question; and until we get these treaties from the Senate we will be unable to say one thing or the other.

HENRY DOYLE: In moving a vote of thanks to Dr. Huntsman, I wish to say that as far as the work of research is concerned. I think we in British Columbia probably take a little deeper interest in it than other sections. There has been more work in the way of research on the Pacific Coast, in the Halibut and Salmon line, than there has been in other sections out here at least. We have all appreciated Dr. Huntsman's remarks.

The CHAIRMAN: Before moving to the next paper which we have on our list here, Mr. J. A. Rodd, Superintendent of Fish Culture at Ottawa is here, and I understand he has an official report from the Government, and perhaps it might not be amiss to have a few words from Mr. Rodd.

MR. J. A. RODD: Mr. Chairman and gentlemen, I will just confine myself to reading a letter which I received a few days ago from the Superintendent of Fisheries. The Minister informs me that owing to his Parliamentary duties he very much regrets that it will be quite impossible to attend the Convention of the Canadian Fisheries Association which will meet in Vancouver on the 3rd, 4th, and 5th June. The Deputy Minister will also be unable to attend as he has been appointed to the Canadian section of the Seamen's Conference that will meet next month in Genoa, Italy. (Reads): "On account of his absence and parliament being still in Session it is still quite out of the question for me to attend the Convention. In the circumstances I am to request that you should represent the

Department at the Convention, and give any information may be required from the Departmental standpoint. You will also convey to the Convention the best wishes for the success of the Convention as well as for its growth in numbers and influence for the good of the Association in connection with all branches of the industry."

The CHAIRMAN: I am glad we have Mr. Rodd here; as the superintendent found his duties kept him from being present. With regard to the International Council, I don't know whether there was any more than an expression of an opinion from the United States representatives. It is something we are very much interested in here, and if there is any more expression of opinion we would certainly like to have it.

PROFESSOR COBB: The United States is heartily in favor of the matter. I don't think there is any question but that the United States Government will officially take active interest in it, and also the various states. We expect to take up the matter at the meeting in Seattle, and we at that time will have proper resolutions covering that subject as you are doing to day. So that there will be no objection to Dr. Huntsman's plan for carrying on the work. We have got to do something, and the quicker we get at it the better. We never got much out of the North Sea Investigation, except collateral issues. We will get at that in this way, and I think we will have something of interest to report later.

The CHAIRMAN: Our next important paper is "The History of the Pacific Coast Salmon Industry" by Henry Doyle, Vice-President, Northern B. C. Fisheries Limited.

History of the Pacific Coast Salmon Industry

BY

HENRY DOYLE, Vice-President, Northern, B.C. Fisheries, Ltd.

It is not generally known that the first canning of Pacific Coast salmon was on the Fraser River in 1863 when Mr. Annandale put up a few cases at New Westminster. His efforts were on a very limited scale but were extensive enough to convince him there was a profitable field industry for someone with a more intimate knowledge of salmon fishing than he possessed. That winter, when on a visit to his old home in Scotland, he persuaded Mr. Alexander Ewen to come to British Columbia and engage in the enterprise. Mr. Ewen arrived in 1864, and from then until his death in 1907 he was recognized leader in the salmon industry in this province. It is largely to his energy, foresight, and the assistance he extended others to engage in salmon canning that eventually made the Fraser River the premier salmon river of the world.

The first salmon canning on what we might term the commercial scale occurred, however, on the Sacramento River in California, in 1864; the enterprise being founded by Mr. William Hume. Like Mr. Ewen, he had been brought up in the salmon fisheries and like him also was a man of sterling qualities of mind and heart. The first pack consisted of 2,000

cases, the cans being all soldered by hand and the tools and methods of packing employed being of the crudest sort. The product sold for \$16 per case, but the high costs involved, and the subsequent rejects for defective tins precluded any profit being made. The results of the season's operation, however, convinced Mr. Hume that money was to be made in the business, and learning that salmon were more plentiful, and the season longer, on the Columbia he transferred his activities to the latter river in 1866. Mr. Hume was the pioneer on the Columbia as he had been on the Sacramento, and he lived to see the pack in that district increase from 4,000 cases the first season to 656,000 cases in 1884, which was the banner year.

After Mr. Hume withdrew from the Sacramento there were no canneries on that river until 1874, when one plant was established. Others shortly followed, until in 1882 there were sixteen canneries operating, and over 200,000 cases were packed. Placer mining however, covered the spawning beds with a mass of debris which destroyed their usefulness and practically annihilated the salmon, so that by 1892 the number of canneries had dropped back to one, and the

total pack for that season was but 2,281 cases. Through artificial propagation the Sacramento today enjoys a run of salmon equal to its old time records, but the demands of mild curers and the fresh fish market have been so great that the canning industry has never been re-established to any extent.

By 1883 the number of canneries operating on the Columbia had increased to 39, but vast as the supply had been it was unequal to the demands made upon it. After 1884, a steady decline set in. By 1902 the pack of the quinnat species had declined to about one third of the banner year, and the number of plants in operation had declined to 14. Since then artificial propagation has restored the aggregate quantity of quinnat salmon in the Columbia, but many of the tributary streams are without stock today since the original runs were fished out and no efforts are being made to restore them by means of artificial propagation.

Commercial canning on the Fraser River by 1876 was represented by three plants and the combined pack was 9,847 cases. By 1901 the number of canneries had increased to 48, to which must be added 25 operating on the American side in Puget Sound waters so that 73 canneries were depending on this one stream for their fish supply that year. The principal pack in those early days were of the sockeye species, and in the pinnacle year of the Fraser sockeye industry over 2,400,000 cases, of 48 lbs. to the case were packed. This represented 30 per cent of the entire world's production of canned salmon that year. At today's selling values the pack of Fraser River sockeye for that one season would represent seven times the entire purchase price for which the United States secured Alaska from the Russians.

How the Fraser has declined has been often told, but that it can be restored I fully believe. Let us hope it will not be long delayed. Now that an international treaty to deal with his problem has finally been concluded steps should be taken at once, and the best and most experienced men engaged to re-establish by artificial propagation this King amongst Kings of salmon rivers.

The year 1877 saw the commencement of canning operations on Skeena River, on Puget Sound, and on several coastal streams of Oregon and Washington. The industry on Skeena River grew and prospered until today, with the Fraser temporarily eliminated, it is the principal salmon river of British Columbia. Puget Sound developed from 5,500 cases in 1877 to 2,500,000 cases in 1913, and while the Fraser failure has effected Puget Sound materially it is still one of the most important section of canning operations today.

In 1878 Alaska entered the salmon canning field, two companies, one of which, the North Pacific Trading & Packing Co. is still operating, beginning that year. Their combined pack was 8,159 cases. Their banner year was 1918 when 134 canneries packed 6,678,000 cases. Fishing in Alaska, however, has been too strenuous, and so alarming has the situation become that drastic changes in regulations are necessary and it is proposed to vest the control of their fisheries in an administrative board whose knowledge of local conditions will enable them to deal intelligently with the matter.

By 1891 the combined salmon pack of the Pacific Coast canneries totalled 1,592,975 cases, which was a

greater quantities than the markets of the world could then absorb. As a result packing operations had to be curtailed, and this was accomplished by a pooling arrangement between packers. Out of this pool was created the Alaska Packers Association, the largest company engaged in the business today. Through intelligent marketing and advertising efforts a demand for canned salmon was created; others followed the lead of the Alaska Packer's Association; and to day the world absorbs an annual pack approximating 8 to 10 million cases.

In the beginning only the quinnat, or spring, salmon was saleable, but as the markets extended, and the fisheries of the Sacramento and Columbia declined,



HENRY DOYLE

Whose Papers and Views on Pacific Fishery Questions were of Unusual Interest

the sockeye species secured the premier position, which it holds today. Its pre-eminence is due to its rich oil and red colored flesh. From sockeye the market grades down through Springs, Alaska Red, Cohoe, and Pinks to Chums, each, in the order named, being a step further away from the sockeye in color and richness. It does not mean, however, that this implies inferior food value, for as a matter of fact the Chum species contains more nutrition than the more spectacular sockeye possesses.

Today the Pacific Coast salmon canning industry comprises over 300 canning establishments with a capital investment of well over \$50,000,000. The value

of the annual output exceeds \$100,000,000, and it directly and indirectly gives employment to a vast army of workers. In buildings, plants and machinery, and methods of packing, salmon canneries are models of cleanliness and up to date methods. In no industry are greater pains taken to ensure the production of a well packed and wholesome food product. New ideas are quickly seized upon and applied to salmon cannery requirements, and the packers are justly proud of both their plants and their achievements.

And as our past history has been, so also can we expect its future. Ups and downs we have had, and doubtless will have again, but the industry in 56 years has expanded from 1 to 303 canneries and from 2,000 to 10,000,000 cases of an annual pack, and with such a firm foundation established we have nothing to fear for the years to come. Today the Pacific Coast salmon canning industry is far and away the greatest fishery enterprise the world possesses, and if we conserve and build up the salmon runs as they are capable of being built up, the day will come when the wise men from the far east will stop wasting their time in the toy fisheries of the Great Lakes and the Atlantic seaboard, and will come west where they can splash in a big puddle, and take their part in a real man's game.

MR. HENRY DOYLE: I would like to add that the industry on Puget Sound was established by Messrs. Myers and Jackson, and we have with us today Mr. Myers.

The CHAIRMAN: I want to have the pleasure of moving a vote of thanks to Mr. Doyle for his able paper. I have met Mr. Doyle on his trips through the East, and only last month Mr. Doyle spent two or three days with me, and I became very much impressed with him; this paper which he has produced is something which I expected of him. The wise men from the East I am sure will take note of his suggestions, and read, mark and inwardly digest what he has said.

G. ATHANS (Vancouver): Seconds. Adopted.

The CHAIRMAN: We have here Mr. Conlon from the Department of Fisheries. Mr. Conlon is the officer in charge of the Publicity Division of the Department of Fisheries, a new Department which has been opened on the suggestion of the Canadian Fisheries Association. Mr. Conlon is to read a paper to us on "The work and aim of the Publicity Division of the Federal Fisheries Department."

The Work and Aims of the Publicity Division, Department of Fisheries

(By J. H. CONLON, Officer in charge).

Gentlemen—Members of the

Canadian Fisheries Association:—

I come to meet you for the first time. However, I should not be altogether a stranger to you, because I understand it is largely due to your solicitation that the Publicity and Marketing Division of the Fisheries Branch was instituted; and of this work I have been placed in charge.

It is not one of my duties to tell you gentlemen how to conduct your business. It would ill behoove me to attempt it. But, perhaps in many years I have gained a broader view-point, and better perspective, which qualify me to extend advice. The position which I fill is, I feel, a connecting link between you producers and a most sympathetic Department. The extent of this sympathy has, I fear, not been fully appreciated by you. Members of your executive, who have had more intimate association with the Department, realize how it feels towards you. But, in some instances, at least, I am forced to believe, an unsympathetic attitude toward the Department is actuated by narrowing one's vision to personal interests. The fact is lost sight of that the Department operates for the best interests of the industry, and of the people of Canada, to whom it belongs. Possibly some of you do not see eye to eye with some policy adopted. Similarly, you might disagree with some decision of an organization of which you are a member, but the majority decides against you. So it is with the administration of the fisheries. Policies are based on the principle of doing the greatest good for the greatest number.

This, while it may seem a diversion from my topic, is of intense importance. You form an organization whose interests should follow a parallel course with those of the Department. The full force of affirma-

tive energy applied by these two bodies can accomplish much, but a small portion of converted energy, in effect, tosses the monkey wrench into the mechanism. The closest co-operation is hoped for, and in this new Division particularly, because in reality its work is to foster and develop your business.

The functions of this Division may be classified as follows:—Publicity, Transportation, and Marketing. That part of your business which begins when your product is ready for market engages its attention. Through publicity it hopes to convert Canadians to the use of fish as a part of their regular diet. You are aware of the fact that many of our people are blissfully ignorant of the extent of our industry, and its importance as a national asset. They are not yet prepared to accept fish into their homes. The per capita consumption of fish in Great Britain is above 55 pounds per annum, while in Canada it is estimated at less than 20 pounds. Why this discrepancy? The answer, I think, is that Britain has put keen effort into the development of the home market. From points where fish is landed, special trains daily carry the fresh product to all parts of the country. While the situation in Canada is more difficult by reason of longer hauls, and the task of keeping fish in good condition, it is my conviction that a big opportunity lies in the development of local markets for the consumption of fresh, frozen and canned fish. The success which has attended the car-to-consumer system of sales has demonstrated quite clearly that all people will buy fresh fish. What they demand is that it be in good condition. They have yet to be educated to appreciate the value of frozen fish. Their experience with this class of fish, in years gone by, has, you will probably admit, not been such that they are ready

converts to its use now. But, we know by this time producers realize the injury they have done themselves in the past by putting on the market anything which will not stand a rigid test.

It seems strange that our rural population has not long before this realized the peculiar adaptability of canned fish for their needs. In my opinion, packers of canned fish should co-operate in a movement to develop this market. This is one case where a co-operative advertising scheme might be adopted with success.

If it is possible for Great Britain to consume at the rate of 55 pounds per annum, it is possible for Canada to increase its consumption to 50 pounds, or roughly,—“each a pound of fish a week.” Estimated on the basis of 8,500,000 population, this would mean an increase of more than 2,500,000 cwt. over the present local trade, or approximately 1,275 tons,—business well worth going after. On an average of 25,000 pounds to a car, this would require 1,020 cars to carry it from coastal points to centres of distribution inland,—that is, taking it for granted that the increase will be in the main, fresh and frozen fish. In other words, more than 500 cars from each coast every year, or ten cars a week, just to carry this additional business.

It is logical that you should work in harmony with the Department in this enterprise. The daily newspaper in my mind, is the very best medium you can employ, that is to appeal to the consumer, and I would suggest some co-operative advertising scheme between you and your retail customers. Then, as regards the material in your advertisements. Some fish have a ready market. It requires no inducement on your part to make people take them. When you want to boost a class of fish with which many people are not intimate, it appears to me it would be much more effective to publish in your space a few practical recipes, rather than to elaborate on the word “fish”, which really does not convey a great deal. If you will study the advertising methods of those prosperous concerns whose business has been developed by it, you will see my point. Cereals, for example, being introduced to the public, you will notice, are made popular by this “stunt.” This is merely a detail, however. What I would impress on you is that your advertising space will furnish you a result just proportionate to the appeal or “punch” in your ad.

Just at the present time there is a contest in progress—instituted by the Department—among pupils of domestic science schools, and another amongst school pupils generally is in progress of organization,—the aim being to keep the question of fish in the public mind, and pave the way for a broader demand for our sea foods.

The development of any industry, someone has wisely said, presents its greatest problems. This is emphasized in your industry, particularly as applied to local markets. Many of you will maintain, and rightly so, that transportation facilities today are not adequate for present conditions. With a development of 150 per cent, consider what adjustments must be made, however, I feel confident that new arrangements will evolve with the growth of your business; but we must be wary lest the evolution be not of a satisfactory nature, but one which will ultimately adequately handle your business. This Division has under consideration at the present time, several matters re-

garding inefficient railway and express service, which it is striving to adjust. Though unfortunately a considerable time is necessary, I feel that ultimately satisfactory adjustments will be made; and in some cases have been made.

Passing on to the third section of our new Division, the extension of our foreign trade requires careful consideration. At the outset, let me sound a note of warning. Get rid of the foreign elements in the conduct of your business. Some months ago a circular was sent out by the Department, for the purpose of getting data as to the effectiveness of fish trade inquiries received from foreign countries through the agency of the Canadian Trade Commission. It was astonishing how few had knowledge of their ultimate markets. Too many producers are disposing of their stocks through brokers in New York, Chicago and other American cities, has it occurred to you that they have absolutely no interest in the Canadian fishing industry? Their business is to make a profit, and they care not where their supply comes from or where it goes, so long as there is a balance on the right side at the close of the year. This is a big factor, and one that you should hasten to correct. Reviewing some literature which fell into my hands recently, I noticed that in 1917, Prof. E. E. Prince, Dominion Commissioner of Fisheries, directed attention to this evil. It is not a matter that should be lightly passed over. You men of keen business acumen should realize the consequence.

Although the activity of the new Division with respect to outside markets has been largely in the nature of a survey, opportunities are apparent. The Canadian Government Merchant Marine should open up new possibilities, and we have already received assurances from the management of this concern, that in its intention to install in its ships in the near future, refrigeration plants to the capacity of 500 tons. This equipment is essential for fish being shipped through the Tropics to the Antipodes, and to South American countries. An effort is being made, by means of literature, to pave the way for you in countries with which we have satisfactory steamship communication. At the present, circulars are being distributed in Brazil and Argentine. But, the uselessness of this seems quite patent should you continue your practice of doing business through foreign brokers.

In concluding these brief and very general remarks, let me transpose an old admonition, which applies to all avenues of trade: “It pays to advertise, but see that you have the goods to back it up.” Advertising will create a market, but the quality of your goods does more to retain it.

DISCUSSION ON MR. CONLON'S ADDRESS

The CHAIRMAN: Are there any gentlemen present who would like to have any discussion on the paper read by Mr. Conlon.

MR. HAGER: Mr. Conlon, you mentioned in your paper that the Canadian Government in their new Merchant Marine ships were about to install refrigeration space. Have you any information as to when that refrigeration space will be installed and ready for use?

MR. CONLON: In connection with that we have had considerable correspondence with the Canadian Merchant Marine, and the last word we had was that it would be installed this year.

MR. HAGER: From what ports are these ships intended to operate?

MR. CONLON: Five ships I understand are in contemplation.

MR. HAGER: How many are going to be on the Pacific and how many on the Atlantic? Are they not going to attempt a schedule between Vancouver and New Zealand?

MR. CONLON: Oh, Yes.

MR. HAGER: And they will have one between here and South American ports?

MR. CONLON: Are you referring to other Canadian Steamships, or Government?

MR. HAGER: Government. We are promised refrigeration space on these ships. It is going to be done, that is the point?

MR. CONLON: Yes.

MR. BURKE: Where does the New Zealand Company ply from. It would not be direct from this port?

The CHAIRMAN: I think this is a matter which the transportation department of the Canadian Fisheries Association might take up when they go into office. I think it would be well for the transportation department of the Canadian Fisheries Association to co-operate with the Department of Fisheries and encourage the installation of refrigeration in the Canadian

Merchant Marine to suit both the requirements of Atlantic and Pacific.

We have now with us Mr. H. B. Short of Digby, Nova Scotia. I do not know what Mr. Short's speech will deal with, but I think it will be along the line of Mr. Conlon's remarks. We would like now to have a vote of thanks to Mr. Conlon for his paper.

MR. F. E. BURKE: I have pleasure in moving a vote of thanks to Mr. Conlon. I think Mr. Conlon's position is the outcome of representation the Canadian Fisheries Association made to the present Minister a year ago at Ottawa.

We impressed upon the Minister that we wanted not some one who was so much familiar with the technical end of the industry, as a man who could absorb the business principle involved. I have pleasure therefore in moving a vote of thanks.

MR. A. L. HAGER: I will second that motion with considerable pleasure. We are glad that Mr. Conlon is occupying the position, and we are glad the Department has seen fit to establish such a position. I am sure every member of the Association will be pleased to co-operate with Mr. Conlon, and I was very much interested in his remarks, and it is with much pleasure that I second the vote of thanks for his very worthy paper.

The Necessity for Standardization and Inspection of Our Fish and Fish Products

By H. B. SHORT, DIGBY, N. S.

Mr. President and gentlemen of the Canadian Fisheries Association. In my endeavor to comply with your request to write and read a paper on THE NECESSITY FOR STANDARDIZATION AND INSPECTION OF OUR FISH AND FISH PRODUCTS, I propose to be brief and only touch upon the more important points in connection with this subject, although a great deal might be said about it.

There is no question regarding the wonderful resources of the fisheries of this country; they are generally conceded to be the greatest in the world. Then why is it that the fishing industry is not being developed as are our other great natural industries? Surely there is a cause. While the slight annual increase in the consumption of fish by our own people is admitted, still it is obvious that we cannot possibly expect them to consume but a small portion of the immense catch we are capable of producing. We must, therefore, look to the foreign markets to consume our great surplus, and, in order to encourage and develop this business, we must improve the quality of our pack which does not at the present time, it is to be regretted, command as good prices in the fish consuming countries as do the packs of some other nations. I now have reference more particularly to our dried and pickled fish.

It is natural to suppose that the Government should always have been anxious to have had Canadian exports make as good an impression on the world as

possible and to have had the goods of their country packed in the best possible manner; but whether the present status of our dried and pickled fish abroad is a reflection on the Government or on the packers themselves I shall not try to decide here, as we are not concerned with the past as we are with the future. Now what is the remedy?

First, the packers must pay more attention to the quality of their export goods and put away from them the idea, which was encouraged by abnormal conditions during the war, that they can dispose of their goods in whichever manner they themselves feel inclined to pack them and that anything, which they think fit for food, will go. We are now facing different conditions; countries that were non-producers during the war are now recuperating into very real competitors, and if we, as a fish producing country, desire to increase our export business in cured fish, we must be prepared to give the foreign countries the kinds of goods their markets require and not whatever we ourselves feel disposed to pack.

Canada produces just as good fish in the raw state as any other country, but the fact remains that in many cases our cured product does not compare favorably nor command the same prices as do the finished products of some other countries. In my opinion, one of the most important steps to improve this condition is the standardization and Government inspection of our pack, so that when our fish products go forward

to foreign countries with the Canadian Government inspection stamp on the packages, the receivers may feel assured that the packages contain just exactly what they are branded.

We, as exporters of cured fish from the Atlantic coast, especially where our goods are destined for points in South America, are obliged to ship them through New York, subject to inspection there, before they are acceptable to our South American customers, thus adding an extra freight rate from point of shipment to New York and a brokers commission which, of course, is charged on the goods. Now that Canada has spent millions of dollars in the building of Merchant Marine and has at the present time quite a fleet of freight carrying steamers, surely it is up to us to provide the necessary inspection at home so that we may be at liberty to take advantage of the direct service of our Merchant Marine, rather than being obliged to ship through the United States who are one of our competitors, especially in these markets and who, no doubt, take full advantage of our trade secrets which are necessarily revealed when our products go through their country. I think it is evident that we cannot hope to build up a successful export business under such conditions.

I am not so familiar with conditions as they exist on the Pacific Coast; but I presume those dealers are having the same difficulty in their export business as we are in the East, and if a standard for the different varieties could be established by a reliable inspection, there is no doubt but what it would very materially assist in building up their export trade.

We, as an Association, should use every endeavor to induce our Government to give our Fisheries the attention they deserve, and insist on a regular standardization and Government inspection, so that they would take a creditable place in the different foreign markets of the world.

I am sorry to note that there seems to be a somewhat antagonistic feeling among the members of the Parliamentary Committee of Fisheries of our Government against any Government inspection of fish products. We must use our best endeavors to overcome this and point out to them the advantages of having such a regulation enforced. I am not going to suggest that we should ask for a compulsory inspection for I fear that there would be serious objection to this from some sources; but I really think that we can ask our Government to put into force a standardization and inspection of fish and fish products. And, when the dealer takes advantage of this and advises his foreign customers that he will sell them goods subject to Government inspection, and they are so branded; the customer will then have a satisfying guarantee that the goods are what he requires.

The dealer himself should be familiar, and so should the Government Inspector, with the quality of goods required for every particular market and therefore be in a position to have his goods sold under Government inspection and so branded. I understand that the United States have already sent an expert to Continental countries to study conditions there with a view of improving their cure, and surely this is something from which our Government could very well take a lesson.

We cannot expect to compete in the markets of the

world successfully unless we have some standardization of our fish. One bad shipment by an irresponsible packer hurts the sale of every Canadian shipment to that market. Nothing is more important to our foreign trade than the preservation of exact standards. I would, therefore, suggest that we, as an Association, use our very best endeavors to try and get the Government to put some regulations into effect along the lines mentioned, and thus provide us with every facility of supplying the different markets with the quality of fish products they require. And if this be done, there is no question whatever in my mind that our export business would increase to such proportions as would surprise those who at present are opposed to any form of standardization or inspection.



H. B. SHORT

A Delegate from the "Far East," whose Paper Occasioned much Lively Discussion

MR. H. B. SHORT: Now Mr. Chairman, I have been very brief in this paper on "Standardization," but I have been striving with this Association in order that more active interest should be taken in connection therewith. It is only a few years since Japan started to export fish to this country and to the West Indies, and do you know that Japanese fish today commands a better price in some of the South Americas than does fish from Canada? Now our goods in the raw state are equal if not superior to the Japanese, but we do lack something in our method of curing, and pack, and until we can get some Government inspection

and standardization for the different varieties of fish which Canada produces, we will never get anywhere with our export business. One of your members, Mr. Doyle, mentioned about the vast fisheries of the Pacific Coast, and we all realize that British Columbia, so far as value is concerned, beats Nova Scotia all to pieces when it comes to dollars and cents, but when it comes to a matter of tonnage, gentlemen, you are not in it, because we produce the cheaper grades of fish. One little town in Nova Scotia produced Two Hundred and Fifty Thousand quintals of dry codfish, last year. That means about Twenty-seven Million pounds, and this fish sold at Fourteen dollars per quintal. So that we have some little sections of the East that provide some revenue for the country. As I say, unless we can get some standardization of our goods, we can never expect to build up our exports and it is by our export trade that the success of the fisheries must depend. We cannot expect to consume but a very small portion of our vast catch among our eight and a half million people. We must bring influence to bear upon the Government to see that our goods are standardized, not only for our Atlantic coast but just as much for the Pacific. I understand you have no difficulty whatever to dispose of your sockeye salmon, because it is a high grade fish; but for your cheaper grades, you do not always find a ready market. It is up to our Government to find a market for those goods. Every dollar we can bring in here from a foreign country enriches us that much more. The United States are doing it all the time. They have an expert in continental countries looking up the different cures so that they can copy and get into the markets over there. I hope some of the rest of you will have something to say about this, as it is something I am very much interested in, and something I would like to see go through.

The CHAIRMAN: Now gentlemen, I believe this is a question which is dear to all your hearts, and I would like to have an expression of opinion from all of you who are interested.

MR. HARPELL (Montreal): This is certainly an important matter. I think it would be well if on this occasion as many men and as many views as possible could be expressed, and I would particularly suggest that the reporter take a very full report of each contribution to the discussion, and if necessary a copy of the discussion together with the excellent paper read by Mr. Short be sent to those who are opposed to it, and to their constituency, and some propaganda work commenced on the basis of this discussion, so that when it comes up in the House of Commons again the House will have a more clear and definite knowledge of the industry in this respect. If it is necessary to grade and inspect apples, where the purchaser may open the top of the barrel to see what is on top before he buys it, how much more necessary is it to open an article that is not opened until a few moments before it comes on the table?

MR. BURKE: I may say, gentlemen, that this is a very interesting subject indeed. A man can get an argument on this subject out of me quicker than on any thing else that I know of. I have been down to Ottawa a number of times, and I get pretty hot under the collar when I talk to them about this. Their view is very limited. This Bill came up for consideration a short time ago. I have seen correspondence about it. It shows some of the means employed to defeat it.

while they are technically correct, they are not the fairest means possible. Why they shouldn't realize the handwriting on the wall, I cannot make out. They have to come to it. We have all to come to it. We have only to look around in the other lines of business to see what has been accomplished in this line. I have a letter in my pocket, which came into my office two days ago from my agent in Cuba. He says: "I see by your letter heading that you have an office in Scotland. Would it be too much to ask you to either to write your Scottish office, or if you will yourself write me and put me in touch with someone in Scotland who can furnish me with a grade of dried codfish as will compare with that turned out in Norway. We find that with the Eastern Atlantic cod, while a very good basic quality, that we cannot compete with the Norwegian cod even though at a less price. I want to put myself in touch with a grade of cod that will compete with the Norwegian; and I want to be put in touch with some Scottish firm that can supply this grade of fish."

We want every dollar in this country that we can bring into it. We have a heavy load to carry, and we have to pay that load out of our natural resources. When we come against the goods that are produced by other countries who have an established trade mark we have to do something which is just as good, or a little better; and when you go to the foreign purchaser, you go to him, and if you can say I have the same codfish to offer you—I have the same kind of goods and the quality is as good; the quality of it is put up to a standard—the standard of the Government of Canada. It may not be good policy to make your inspection compulsory. Personally, myself. I would like to see that done, but we have to recognize the other chap's viewpoint, and he may not see that viewpoint at first. But if the Government will furnish us with the machinery, we will do it. There is no question but what the Department is in thorough accord with the principles of this Bill. They have labored against considerable handicap, but they have made great headway. That is where the Canadian Fisheries Association comes in. They have an organization that has a membership that is representative of the fishing industry in Canada. If we will get together and give some of these chaps that represent these constituencies who were on this committee, but who hadn't enough interest to be present—if we will get hold of them and make some impression on them so they will attend these meetings, we will probably get this thing through. Here is where we are: We want a market, and it is up to these people down at Ottawa to help us; and it is up to those men from these other constituencies to help us; because it just as important to them as it is to us. But do not make it compulsory at first unless it is necessary. Meet them half way if at all possible. You have only to look at the butter of New Zealand and the mutton of Australia. There are hundreds of thousands of carcasses of mutton bought in Australia. You can send your order to Australia, and they will ship you carcasses of a certain grade. Some of us, however, when we sell to a customer get certain telegrams after the prices advance; "Goods rejected on account of not being up to sample."

The CHAIRMAN: Gentlemen, I might say that my views are in sympathy with those of Mr. Burke and the paper which has been ably produced by our friend

Mr. Short. The moment the Canadian Fisheries Association heard that the Bill was defeated, your President and Secretary and whatever local executive we could get together that same day, proceeded to Ottawa protesting strongly against the defeat of the Bill. We personally saw the Minister of Marine & Fisheries, and I am glad to say that he was very much put out himself to see that the Bill had been defeated. The Honourable, the Minister of Marine & Fisheries, when he gets his lower jaw locked, is a pretty stubborn man; and he assured the delegation that this Inspection Bill would go through. He explained the technicalities, and he explained that many members of the committee were not there; and I have every hope and belief that before very long, or probably before the session closes even, that the Bill will become law in this country. We have gone on record, however, strongly, and I think that one of the most important things that can be done at the present time is that a further resolution be passed on the matter and wired direct to the Minister and to every member of that committee with whom we are acquainted.

On the American side of the Line they have national canned fish inspection. I read that eighty per cent of the sardine manufacturers had signed up to have that inspection stamp put on their goods, and before the end of the month it is expected to reach ninety per cent. In Alaska they started last year, and this year they are increasing it very much. I think as there are a large number of Americans here, that it might be interesting to hear from them, to know what success they have had.

A friend of mine asked me if I couldn't get a certain quantity of herring, and this customer was in the United States. He said he was willing to pay \$1.50 a barrel more for the herring provided he could get ready and easy Government inspection.

MR. DAVIS: (Vancouver). In an issue of the American Recorder, published in Washington, D. C., under government supervision and for the purpose of extending the markets of the country, there is an article urging the people of the United States to adopt the inspection and gradation under government supervision of apples and eggs, for the reason that in the foreign markets they cannot at the present time compete with the output of Canada. If that argument is good for the people of the United States as to apples and eggs it seems to me that the same argument should be good for the people of Canada as to fish. (hear, hear). Just one other point: It may be unnecessary to make any argument on the two points, namely the advisability of having inspection; second, the advisability of making it noncompulsory. Personally I believe that it should be noncompulsory. If it is a good thing those who do not avail themselves of it will suffer in consequence, and if it is a bad thing, well we don't want it anyway. So that my voice would be in favour of a bill providing for inspection, making it non-compulsory. (applause).

MR. HAGER: There is one phase of this question that has not been discussed. Mr. Short tells of an instance where salt fish, I believe, is sold through brokers in New York City, or accepted there for South America, or West Indian destination. That is something entirely new to me. I have sold fish all my life; canned fish, frozen fish, mild cured or salted, but only on an f.o.b. basis.

MR. SHORT: I was speaking about South American shipment. Up to a month or so ago we have had no facilities for shipping our goods direct from Canada

to points in Brazil, or South America. We have had sailing recently one or two Canadian Government steamers. We have always been obliged to ship via New York. These dealers in Brazil and South America know very little about Canada. They do their business principally through New York. They buy all their goods through New York, on inspection there; and then they are forwarded by an American line to their destination. The point I wanted to make clear was this—the reason for putting that clause in my paper was, if we could get a government inspection, and we hope in the near future that we will have government sailings regularly direct from Canada to South America and Brazil, that we would be in a better position to do business in those markets.

PROFESSOR COBB: It might be as well to give you a little of the experience we have had on this question of inspection. Several years ago the sardine canners combined and established an inspection system there, and they put Mr. Lewis in charge of the work. That is what was known as a complete packing inspection. They went over the factory and saw that it was alright; they saw that it was alright through the different stages of manufacture, and finally put the stamp of the Association on it. They discovered they had been a little premature at the end of the first season. The inspectors were rather green at the work, and some of the products didn't come up to expectations. The next year, after their first year's experience, they did better. A little later on the system was much improved. Now the salmon canners have the same proposition or possibly fortunately, under the conditions that prevail, this was only a cannery inspection, their idea being solely to work up to a pack inspection. Now there is quite a demand this year for packing inspection, but the Association felt they were going a little bit too fast. Do you know how many canneries there are? There are something like one hundred and forty-five. They are scattered over a very wide area, and it would be almost impossible to operate with less than one hundred men and possibly more because many of them could not cover more than one plant; and it is their intention in a year, possibly next year and possibly the year after, to establish a full pack inspection. I can assure you that every member of the Association feels that that is nothing but the step to Government inspection. If you are going to get anywhere you will have to have the government stamp on your products. There seems to be a feeling of confidence where there is a government stamp. No matter what inspection you give personally, it will never have the effect as if the Federal Government inspected your goods. Someone will always say, "He has inspected his own goods." Whether it is compulsory or noncompulsory, I think you will find that the public itself will make it compulsory; so that the Government does not need to. If a man finds he is getting good goods out of that label, he is going to demand that he get those goods which are labelled in that way.

MR. BURKE: Take for instance the salt herring industry in Scotland, where they have government inspection. Take some of the big herring packers in Scotland. These men would not think of sending their established brands out of their factory without the government mark on, nor would they dream of sending them out in anything but the best way.

MR. O'LOANE: I have been very much in favour of Government inspection. If we cannot dispose of our goods at home, we have to look for outside markets. With that government inspection of standardization,

I am sure it would help us very much in all our export markets. What Mr. Short said about the Japanese dried codfish going over to Cuba and its being preferred to the eastern Canadian goods, astonishes me. Eastern Canada has had that market for a hundred years. The Japanese have had it for five or six years at most. We have been told that Norway produces the best fish. Now stock fish was a big line from Norway, and the Japs were getting in very strong on that; but the main reason of their getting in was on account of their standardization; and if we have that to support us in going in for export trade, it will help us wonderfully. I am very much inclined to think that the producers and packers who object to it, are putting up poor goods. I believe that is the main reason why they don't want an inspection. (Hear, hear.)

DELEGATE: I want to thank all the gentlemen present for the discussion that has taken place. I am like Mr. Burke, I get hot under the collar when I speak of inspection. The members of Parliament he mentioned there who were responsible for killing this Bill, Mr. Duff and Mr. Sinclair, both represent fishing constituencies, and they are afraid of the fishermen's vote. What we want to do as an Association is, to get after your member, and when the House meets next session, have him register his vote and influence when he gets to Ottawa.

COL CUNNINGHAM: For some years there has been an agitation for the standardization of all fish-products and within the past two weeks I have received instructions to keep the question before the people of British Columbia and do everything possible to secure standardization. One question I would like to ask Mr. Burke is, what value would an inspector's certificate have to the wholesale purchaser? That is, would he be willing to take that certificate as being of sufficient value without inspection by his own representative?

MR. BURKE: Suppose a man comes to me and says, "I want to buy a thousand cases of Sockeye salmon." I say, "Well, I will sell it to you," and he says, "What is the price?" I say, "The price is such-and-such a thing." "What standard?" "Government inspection." Regardless of that fact, probably a lot of these chaps would tell you that they wouldn't buy on that system. Their brokers will pass the quality of the fish and will have to stand the cost should it come back. If a broker passes that fish here and it is not up to standard, he has no come-back on me. He has to swallow that himself. It is as much value to the packer as it is to the producer. Any legitimate broker will, I think, in a very few years, accept it. If he doesn't want to accept it, we cannot help it. If he wants to drive a separate bargain—if you want to sell him stuff on the basis of his inspection, that is alright; but I tell you that that standard of inspection will very soon eliminate every other basis of selling. In fact we couldn't get anyone else to inspect the stuff except perhaps the broker, and pay him for his knowledge. I would be willing to pay from five to ten cents a case on mine to get a government stamp on it. I think it is only a question of determining whether you were going to do it or not and I think then that the objection of the buyer will soon disappear. It would tend to cause him to eliminate the middleman and buy direct from the producer. A man that knows his business I don't think would object. It is a source of protection to them, and any man that knows his business I don't believe it would hurt him one iota.

COL. CUNNINGHAM: The reason I asked that question is because it is raised many times in my office—the question arising between the purchaser and producer. I raised it so that it would give someone an opportunity of placing a value on that government certificate.

MR. BURKE: I don't know what you can call it, but the average human being will take a product that has the government stamp of approval as to quality that is not nearly as good probably as something from an independent manufacturer.

MR. DESBRISAY: Would be passed anything that was second grade or would he only be authorized to pass first grades?

The CHAIRMAN: That is a matter of detail. They haven't gone into any details in connection with the Bill. It is purely one of inspection. There is nothing in the Bill about salmon or any other kind of fish, or how it shall be handled.

MR. DESBRISAY: I think it would be a bad thing for salmon on account of the grades. I believe that they should pass nothing but what is first class. Anything that is not first class should not be sent out of the country.

MR. HAGER: I understood Mr. Conlon to say that the Bill is now before the House. Do you know from the terms of that Bill whether this inspection is made compulsory, or optional? That I believe is the meat in the coconut.

The CHAIRMAN: I am quite sure it is compulsory.

MR. HAGER: Why can't this Association suggest a Bill that is optional and not compulsory, then where will you find a man or anyone in the House that can object to it?

The CHAIRMAN: I believe their idea of compulsory inspection is that it would become more effective by having it compulsory than by having it optional. There was a bill before the house on the salt herring last year where it allowed Government inspection, but there was no machinery arranged for the inspection of these herring.

When you get your stuff into a can or package it is almost too late to make a change. It is at the point of production you have to deal with and check up your product.

MR. BURKE: Government inspection is going to revolve itself back to the point where it is up to the Government to punish the packer for not packing according to standard. There are very few men that put up stuff who do not know what the quality of it is going to be when it is turned out. Where they put it up and they know it is not good stuff and they are taking this position of, "Well, we know it is not good stuff, but we will try to slip it by those men; we will offer it for \$1.00 a case less than the other fellow, any maybe he will pass it." That is the man he want to get after. That is the man that is responsible for the poor market that exists today.

If we can eliminate that man we must do it. I had a buyer from Singapore who wanted to buy Chums. He said: "I just came back on the Empress of Russia. I went into five wholesale houses in Singapore and they opened Chum salmon for me and told me they had bought it at \$2.00 under the market, and when they poured it out, some of it poured out like soup." That was sold at a reduced price. That is the man we want



*J. A. PAULHUS, Montreal.
First Vice-President, Canadian Fisheries Association.*

to get after and put out of business, here, and we can only do that by checking him up so that he cannot put up that sort of stuff.

H. B. BELL-IRVING: (Vancouver): There appear to be two points we want to be careful not to forget. One is the question of inspection. Our executive should get together and study the details of this Bill which we are informed is before the House, or will shortly come before the House. The details of the Bill or suggestions for a Bill, should be carefully thought out by the officials of the Association and recommendations made to the government giving the Association's views as a whole, so that they do not pass a Bill which will not be accepted. There seems to be some contention as to whether it should be compulsory or not. I think that Mr. Burke's suggestion of making it optional for the time being would be the correct way to move at present. As to the suggestion of Col. Cunningham as to what value a certificate would have: That seems to be a most important thing, and the value of that certificate will be determined upon the Bill. I think it is possible in this Bill we are trying to get through, that when a Government certificate is issued, that it really means something, and that nobody can reject the goods on that score—on the ground that they are inferior in quality at any rate. I think our President should instruct our executive immediately after this convention, that a special delegation or committee should be asked to try and get in touch with the people who are trying to get this Bill through in Ottawa, and go over those clauses that are liable to upset it, and which are not quite settled yet. As to its being compulsory or optional I believe the bulk of the people would want it optional for a few years at any rate. I think there is no reason why the Bill should not be made broad and sweeping and take in the cannery interests also. My chief point is that this Bill which is mainly acceptable, should not be allowed to go through in its present form; but after those clauses

which are objectionable are altered.

THE CHAIRMAN: If there is no other discussion, this matter will be referred to the resolutions committee and brought before the meeting again on Saturday afternoon, when these resolutions will be put before you for ratification or otherwise.

MR. HARPELL: I think it is very necessary that as many as possible of the points introduced here should be brought up.

MR. BURKE: That point which Mr. Desbrisay mentioned, the lower grade. They are packing those fish when their value as a source of propagation are a hundredfold what they are put up in the cans and sold. If we will eliminate them in that form, we will have the grade of fish. They have allowed them to take that fish when it was not fit to be canned. I hope there will be some means taken in Ottawa to stop this kind of fish from going out of the country.

MR. O'LOANE: I think the point Mr. Cunningham asked Mr. Burke was, would we accept Government inspection without having our own. Yes, we will. The merchants here who buy government butter, accept the government stamp of their countries, and they would not accept goods so readily if they hadn't the government stamp on them. There are a few English firms, large buyers, represented here, and those large buyers would probably, though there are not many of them—probably half a dozen or so, keep a man here nearly all the time. Those firms would probably continue to have their own inspection done in that way. But while they take the bulk of the number of cases, probably ninety per cent of the buyers would take the Canadian government inspection in preference.

THE CHAIRMAN: This has been a very heavy afternoon, and rather than rush you too much in one day, we will adjourn until 10 a.m. tomorrow morning.



FRIDAY SESSIONS

June 4th, 1920.



Friday Morning Session at 10 a. m.

PRESIDENT A. H. BRITTAIN: Gentlemen, I am sorry we are a little late in starting, but it is owing to the fact that some of our Vancouver friends are unable to stand the pace. We, from Montreal, are used to this night stuff, and we are right on the job in the morning. Secretary Wallace has an announcement to make.

MR. WALLACE: You will find a paper on the programme on the subject of floating equipment and its relation to our industry. This was prepared by Mr. Lambert, a well known naval architect and a member of our Association. He was unable to get to the Convention here so, as it is rather long, it was decided to table it without reading. But there are some very interesting parts of this address which I think should be brought to your attention. There is a part referring to Admiral Jellicoe's report with regard to the training of fishing crews and the equipment of fishing vessels for Naval Service should the necessity arise. It is worthy of as much attention as you can give it; and possibly after you have read it you may be able

to bring some comment before the meeting before we adjourn finally on Saturday afternoon.

THE CHAIRMAN: Gentlemen, we are indebted for the presence of Mr. L. H. Darwin, State Fish Commissioner of the State of Washington, who has kindly consented to read a paper on the subject of "International Treaties and State Agreements." Mr. Darwin is here I think, and I will ask him to come forward.

MR. L. H. DARWIN: Mr. President and Gentlemen of the Canadian Fisheries Association. Your President has correctly interpreted it. I shall have to read what I have to say, rather than try to deliver it extemporaneously. It is certainly a great pleasure to have this opportunity to talk to the members of the Canadian Fisheries Association and those people who are interested in the fishery problems. Back in our country we have a joint interest in our salmon fisheries that is of such magnitude that it has been attracting the attention of the two governments for the past fifteen years.

International Treaties and State Agreements

By

L. H. DARWIN, State Fish Commissioner,
State of Washington



Up to the present time, at least, our Pacific Coast salmon fisheries have been the most valuable, both of Canada and of the United States. The salmon fisheries of Western Canada are almost entirely within the province of British Columbia. The American subdivisions interested in them are Alaska, Washington, Oregon and California, in the order named. Almost since the inception of the two governments, we have been perplexed by the International problems presented by fishery questions.

During the early years of our history, these questions arose entirely on the Atlantic Coast, and the Great Lakes. Probably the first Pacific Coast fishery question to attract more than local notice was that of our fur seal fisheries. But the one involving the greatest interest which has arisen up to the present time, is that of the Fraser River sockeye salmon. The larger interest has been aroused because of our knowledge that it lay entirely within our own hands to perpetuate or destroy it.

Reduced to its final terms, the Province of British Columbia of the Dominion of Canada, and the State of Washington of the United States of America are the two units of the respective governments most vitally interested in the sockeye fishery question. The other provinces of Canada, and the other 47 states of the American union are interested in the question only as it may, in a small way, effect their food supply.

It would seem, therefore, that it would be an easy matter for the two directly interested parties to settle this problem, which is of such vital interest to themselves. It has been known for twenty years that if the sockeye fishery is to be perpetuated, there must be joint governmental action along conservation lines. The difficulty, however, has arisen from the fact that in Canada, the control of the fisheries is with the Central or Dominion Government, while in the United States, the central or Federal Government has no direct control over the fisheries questions, but this lies with each of its 48 states.

Admittedly, only through an international treaty can the Federal Government control the fisheries of the State of Washington, and there are those who challenge the right of the Government to do this even through the medium of a treaty.

The necessity of concerted action to conserve our sockeye fishery was recognized to an extent fifteen years ago, when the first was made along this line. This attempt was along the lines of having the State of Washington close sockeye fishing for a certain term of years, and it was proposed that the Canadian Government would take similar action, as regards this kind of fish in the Fraser River.

It is hardly necessary to mention that the joint interests of the two countries in the sockeye fisheries

arises from the fact that the sockeye salmon first enter American waters and pass through them for some 50 to 60 miles before entering Canadian waters and starting on their pilgrimage up the Fraser River, to their spawning grounds. Insofar as taking the Fraser River sockeye salmon in salt water, by far the greater opportunity to do this is that presented to the Americans. In British Columbia they are taken within the river itself, or just off its mouth.

Let me suggest here, however, that while we generally refer to the Fraser River sockeye question as the only one in which we are interested, in my judgment, we are interested to almost as large an extent in our humpback.

Insofar as the sockeye is concerned, we know that possibly 98 or 99 per cent of those which enter our waters are spawned on the Fraser River, as the Skagit is the only American stream which they ascend. Just what percentage of our humpback are spawned in the tributaries of the Fraser, I am unable to intelligently estimate. It is, of course, not anywhere near so great as the sockeye, but it would not surprise me if forty to fifty per cent of our humpbacks are spawned in the Fraser. And the question of conserving our humpback is just as pressing a question as that of conserving the sockeye—if not more so. This for the reason that our sockeye run has been so depleted that its rehabilitation must of necessity be the work of years. There still remains a sufficient number of our humpback to permit of a restoration of that run much quicker.

The restoration of the humpback run is also possible of quicker accomplishment because of it being a two year fish, instead of a four year fish, as the sockeye.

The 1905 attempt to secure a reduction of the sockeye fishing by action of the Washington legislature having failed, those interested in the question turned to Federal action. So we find along in 1908 or 1909 the appointment of High Commissions by the United States and Canada for the purpose of making a treaty covering the situation. As I recall, Prof. Prince headed the Canadian Commission and Dr. Jordan, the American. They executed a treaty, which was ratified by the Canadian parliament and American Senate, but which became inoperative because the American Congress refused to pass the laws to put it in effect.

Then came the world war and America's entry in 1917 and another effort to settle the fishery disputes between Canada and the United States, including the Fraser River sockeye question. This last attempt resulted in the signing of a treaty laid before the Canadian parliament and American Senate in 1919, to which objection was made before the American Senate which resulted in its withdrawal and its amendment and re-signing within the last ten days.

So again the battle is to be waged for and against its ratification by the American Senate. And should the efforts to ratify it succeed, it is still necessary to

pass a measure through both the House and Senate and have the same signed by the President, in order to make effective its terms.

Admitting that all of this may be done—which to my mind is very doubtful—what then have we accomplished?

Whatever we may have thought regarding the sockeye problem in the Spring of 1917, we now know that this run has been almost entirely destroyed. And those of us who are familiar with the terms of the treaty feel that the remedy prescribed in the way of closed season are insufficient, in view of the great depletion of the run as since revealed. There are those who feel that a closed sockeye season for a considerable term of years, offers the only hope of restoring the sockeye run to anything like its former proportions. And this closed season must undoubtedly be supplemented by intensive artificial propagation or hatchery work.

The sockeye was the most valuable salmon run ever to enter the waters of the State of Washington because of the fact that these fish appeared in greater number than any other specie and pound for pound command as high a price as the most valuable of any of the other species. Therefore, the State of Washington is tremendously interested in the preservation of the sockeye run. It is also interested in the preservation of its other salmon runs, and with the exception of the humpback, the preservation of these other runs are very largely a matter of its own action. Some of the other runs are also being depleted with the consequence that the preservation of our salmon fisheries has become a problem in our state, which is commanding the attention of our business interests, and our thinking men generally, irrespective of locality.

For the first time, our people are awakening to the fact that the great salmon fisheries of Washington are threatened with destruction and I am very sure that action will quickly follow on information and thus I bring myself to my subject of today—"International Treaties and State Agreements."

Before taking this up, let me refer to one other question, in which the State of Washington is jointly interested with British Columbia in finding a solution. This is the taking of immature salmon off Cape Flattery. There is a tremendous economic loss being suffered by our State today by reason of the catching of our immature salmon. The greatest perhaps has occurred at the mouth of the Columbia River, but within the last thirty days in self-protection, the fishing interests of Washington and Oregon have in a measure put an end to the situation there. But the Cape Flattery situation is akin to the sockeye question in that the Government of British Columbia is interested.

Prof. E. Victor Smith, of the University of Washington, has been engaged by us for the last three years examining into economic losses we are suffering by the reason of the taking of the immature salmon and has gathered some data that is absolutely startling in the story of waste which it tells.

One illustration will give you an idea. In the third year of its life, the silverside salmon, near Cape Flattery, taken in the months of April and May, will weigh an average of from $1\frac{3}{4}$ to 2 pounds. If that same fish were permitted to live until the 5th day of the following September, or some four or five months longer, it would become mature and weigh an average of 10.2 pounds.

So far as our own State was concerned, the salmon shortage which manifested itself so disastrously from Oregon to Alaska last year, was clearly foreseen by our Department. The danger signals of the depleted runs first fly on the spawning beds. The much smaller number of fish, which appeared on our spawning beds in 1917-1918 permitted our Department to know what to expect later on. This, together with the knowledge of what the Government was trying to do through the medium of the Sockeye Treaty with Canada, led me to prepare a Fisheries Code, which was introduced in the 1919 session of our legislature and provoked the greatest legislative fight in the history of our State. And, while the proposed code was defeated, everybody recognizes that the session of our Legislature, which convenes seven months hence, must deal in an intelligent way with the question of our salmon fisheries.

Up to the present time, all of our law making efforts have been along the lines of a very lengthy code, dealing with the multitudinous questions presented by the many different localities. Any effort to curtail fishing always results in the protest of those who consider such action as injurious to their personal interests. The result is that these people appear before the legislature and protest passage of the bill.

The fisheries question in our state does not differ from a number of other questions, which have perplexed our people as a whole, or of some of the several states separately. And I am in favor of finding the same solution for our fisheries question—but in a much shorter space of time, than we have found for our other perplexing problems, and that is by the appointment of a Fish Commission, with full authority to say how, when and where fishing operations may be carried on.

In our State, we have an Agricultural Commissioner, but he does not plant the crops; we have a Horticultural Commissioner, but he does not plant the orchards; we have other Departments dealing with our natural resources, but the only Department of our States, which is in anywise interested in annually producing a supply of raw material, is the Fisheries Department. If we fail annually to plant our fish crop, every person in the business must suffer. Nor do we receive the assistance of any individual in this work.

For one hundred years, our great American political parties divided over the tariff question, and at the end of 100 years they were no nearer a solution than at the beginning. Some five or six years ago, however, the entire question was turned over to a tariff commission, and neither during the last campaign, nor the one, which we are now approaching has there been any suggestion that tariff can again be made an issue of even passing interest.

The control of our railroads perplexed our National Government, and our several State governments for thirty years and the solution in each instance was finally found by placing their control in the hands of either the Interstate Commerce Commission, representing the Federal Government or in Railroad or Public Service Commissions by the several States.

Quickly followed the placing of the other public utilities corporations under the control of Commissions clothed with full authority to study the situation and prescribe the necessary regulations.

In my judgment, we are going to find a solution of our sockeye and humpback fisheries questions, in which Canada and the State of Washington are interested, through the creation by the State of Washington of a Fish Commission, clothed with powers heretofore set out.

We, of the State of Washington, know that on the North our fishery questions must find common solution with Canada, and on the South with the State of Oregon. And we know that our salmon fishing problem is of vital interest to our one state alone, and of hardly passing interest to the other 47 states of the American Union. Why should we not therefore, ourselves settle the question of such vital interest to us and of so little or of no interest to all the other states in the Union?

A Commission created and clothed with the powers, such as I have suggested, could within two week's time, arrive at an agreement with the Dominion of Canada and put that agreement into effect. Fortunately, under your Canadian laws, your Governor-General-in-Council has power to do exactly the thing that I am urging that our legislature shall delegate to a Fish Commission of the State of Washington.

The fishery authorities of the Dominion of Canada and a Fish Commission of the State of Washington, composed of men who know the situation at first hand could get together and agree upon a program and put it into effect instantly. If the program agreed upon should not product the desired results, these gentlemen could re-convene at any moment, and make whatever changes are necessary. How different the workings of a High Commission and an international treaty!

During the 15 years that they have been agitating for a treaty, the subject matter—namely, the sockeye fishery run—has practically disappeared. And I have small doubt that before any international treaty is ever made effective, the Fraser River sockeye fishery question will have ceased to attract attention by reason of the destruction of the run.

This Commission can accomplish the same results in our Columbia River Fisheries on the south in its dealings with the State of Oregon, as can be accomplished in its dealings with the Dominion Government. And there would be no necessity whatever for a treaty. The only thing necessary would be the promulgation of identical regulations. In all candor, I think I may say to you gentlemen that never in the history of our State has there been the public interest in finding a solution of our fishery questions as exists today, and I believe that long before any international treaty is made operative, the opportunity will be presented to the Canadian Government to obtain the results desired through the medium of an agreement with a Fish Commission of three or more members, of the State of Washington, which I confidently hope will be created by our next legislature which assembles in January 1921,

The State of Washington is interested in the creation of a Fish Commission not only to settle problems in which it is jointly interested with British Columbia on the North and Oregon on the South, but for the purpose of stabilizing the industry representing our third greatest natural resource, in which there was invested in 1919 in equipment and working capital in round number some fifteen millions of dollars, and

which produced an output of the value of from eighteen to twenty millions of dollars.

I have had the honor of serving the State of Washington as Fish Commissioner for slightly more than seven years, and from the moment I began my service I started the work of compiling statistics. We know that annually the number of fishermen and the number of fishing appliances has increased and that we have had an annual corresponding decrease in the number of fish. We have seen the price of our salmon increase during that time from 130 per cent, the lowest, to more than 2,500 per cent, the highest. We have seen fishing appliances, which prior to 1913 were hardly taken into our calculations, increase in number and effectiveness until in 1917 in Puget Sound they took 59 per cent of all the fish taken by all the appliances combined. I refer to the purse seine. And I think that when we have completed compiling our statistics for 1919 it will show that they took as great a percentage in that year as in 1917.

1913 was the first year I had the honor to serve as Fish Commissioner of the State of Washington. It was the year of the big run of the sockeye salmon. In that year the total number of salmon of all varieties taken from the waters of our State was 41,430,444. Four years later this number had shrunk to 22,989,289. In 1914 the total of salmon taken was 9,488,263 while four years later the total had shrunk to 5,466,203.

In 1913 the total number of fishing appliances operated in the State of Washington was 3,682. The number steadily mounted until in 1917 there were 6,279 and in 1919 the number was in excess of 6,750.

Let us proceed with the comparison. In 1913 the total number of cases of salmon packed in Washington was 2,869,126 of a total value of \$12,937,006.78, or an average value of \$4.51 per case.

The four-year corresponding period was in 1917, when we packed a total of 2,340,101 cases of the value of \$16,797,579.50, or an average value per case of \$7.50. In 1918 the total number of cases of salmon packed in Washington was 902,749 of the total value of \$8,053,522.35, or an average value per case of \$8.92.

Let us look at the price increase of the individual fish itself just as it was taken from the water. The average value of the salmon, just as it was taken from the waters of our State in 1913 was 12.8c each. In 1917 this average value had increased to 53.9c each, while in 1918 this average value had increased to 71.2c each—an increase in average value from 1913 to 1918 of almost six hundred per cent.

DISCUSSION ON MR. DARWIN'S PAPER.

The CHAIRMAN: Before moving a vote of thanks to Mr. Darwin for his most able paper, I think it might be well if we should have some discussion, if the members so desire.

MR. HAGER: I would like to ask Mr. Darwin one question. The paper made reference to the International Treaty having recently been signed and sent before the Senate for ratification. May I ask if Mr. Darwin knows whether this is a treaty in its entirety or just a portion of the treaty, or just that portion which pertains to the salmon fishing in Canadian and American waters?

MR. DARWIN: I think the only treaty is with regard to the Sockeye salmon, and while it is supposed to be kept a secret until it is reported to the American Senate, our newspapers have carried the story that the only thing that has been done, the only thing that has been changed, is when originally submitted in 1919. The objection that has been made to the treaty as first promulgated is that it did not recognize our law courts as final. I understand the Treaty with that correction has been re-signed.

MR. HAGER: Do you know what became of that portion of the treaty that had to do with the Halibut fishing, more especially during the closed season?

MR. BABCOCK: I understand there were two treaties. There was what was first known as the Sockeye, which did not take up the question of halibut at all. There was another draft made which takes in halibut. That was signed separately from the Sockeye, and was sent to the Senate. It put the administration into the hands of a commission which is created by the Sockeye Treaty. But I understand that Treaty was not withdrawn from the Senate, and has not been changed in any way, and that they are separate treaties. The Halibut Treaty went through, and the Sockeye Treaty didn't go through. There are no provisions for executing the so-called halibut treaty.

MR. HAGER: I thank you very much Mr. Darwin and Mr. Babcock. I have been trying most earnestly since that commission sat about two years ago to secure either from the Canadian or the United States Governments a copy of the terms of the treaty; we being particularly interested—my firm, in that portion of it dealing with the halibut situation. I have been absolutely unable to get any information before. The nearest I got to it was an article in the February edition of the Pacific Fisherman, which did not know what was purported to be done, and which might have been a copy of that portion of the proposed treaty dealing with the Halibut Treaty. As Mr. Babcock told us, that part of the proposed treaty has sometime since been signed, and is now before the United States Senate, or Congress for ratification. That in itself is news, and that being so, I wish, gentlemen of this convention, to bring to your attention one important matter. It appears to me to be very vital. I wish I had a copy of that Pacific Fisherman issue. I would like to refer to a particular section, if I had a copy of it before me.

MR. BABCOCK: Here is a copy of the Sockeye Salmon Treaty.

MR. HAGER: I would like to have the particular section that I referred to. There it deals with the proposed closed season for halibut fishing, which is a conservation measure, that I and my associates have been earnestly striving to secure for a good many years. That question of closing the right to fish for halibut for a stated period each year is a conservation measure which I believe is the first and only one that has been called to the attention of the respective governments of Canada and the United States, in which all interests are agreed. The fishermen themselves—the argument of the fishermen, in so far as I know, the British Columbia Fishermen's Union, the companies operating steamers, the canners and manufacturers and distributors and everybody connected with the industry so far as I am able to learn, are unanimous in the belief that there should be a closed halibut fishing season: opinion, of course, varying whether it

should be six, eight weeks, or three months; and I think it is generally conceded that three months months closed season each year is the right thing. As I already have parts of the proposed draft treaty where it is proposed to enforce the terms of the treaty, I can see a very serious oversight. Now, as I pointed to the commission when they sat, the enforcement of any such regulation dealing with deep sea fishing is a matter that is very difficult to accomplish; and there is only one way I believe in which it can be accomplished, and that is for the Dominion Government and United States Government to close its ports absolutely for the receiving of halibut during the closed period. Now according to the terms of the proposed treaty, it deals with the question of Canadian and American fishing vessels, and the ports are closed to vessels of those two countries. But that does not fill the bill at all. It says nothing of British register, or any other nation; simply those of Canada and the United States. Supposing the two countries interested get together in all good faith, and sign this agreement and put it into effect, what is to hinder any company or individual or firm so disposed from operating a vessel of Japanese register, or Norwegian or Swedish or any of the Scandinavian countries or ships of any other nation from operating? The terms of that Treaty should be corrected so that the two countries interested, who are acting in good faith, should not be penalized. That is a very important point, and I wish to go on record to the extent that before the Treaty is finally passed that that matter should be finally corrected.

Another provision of the Treaty in respect to halibut fishing is that other or deep sea vessels that may be fishing during this closed period might catch other varieties of fish, and incidentally catch some halibut. According to the terms of the Treaty such halibut so taken are to be held in a fresh state, or frozen in the port where they are landed, and must be consumed I believe. That is a pretty good precautionary measure, but I believe it can be improved upon. Anyone inclined to sharp practice could take advantage of that situation by landing a trip of halibut which would be very valuable when it probably would be the only fresh halibut in the country available, and would command, naturally, a very high price. To pretend that they were fishing for some other kind of fish and then get 100,000 pounds of cod fish and halibut, might be a very profitable business. It occurred to me that an improvement over the present measure would be to have any such halibut landed, whether caught fairly or dishonestly, it should be the property of the Government or port where it is landed, to the extent of say, one half its value. The court or commission that is to carry out the terms of this treaty should have every pound of halibut under its jurisdiction, and take one half of the proceeds and then penalize the ones catching the fish so that there would not be any object to break the law. I think that is all, gentlemen.

The CHAIRMAN: I think, gentlemen, if you think it is in order, that we might defer the closing of this paper until tomorrow or some other time, and by that time Mr. Hager will have the article he refers to. Is that your wish? It is a very important matter. The point that he brings up is going to lead to all kinds of misunderstanding and other things.

MR. BABCOCK: Mr. Chairman, if you will permit me; So far as your suggestion to the Halibut

Treaty is concerned, I see no objection to that. As a visitor to your Convention, I should not like to see Mr. Darwin's paper, so far as it relates to the international agreement, to pass without discussion at this time, because it is fresh in all your minds. The essence of Mr. Darwin's paper is the greatest fishery question in which Canada and the United States are engaged.

The CHAIRMAN: It was not my intention to stop that discussion.

MR. BABCOCK: I am very much interested in what Mr. Darwin has had to say. He has handled it quite differently from any other presentation we have had from south of the line. I had the honor of being a member, representing Canada—being one of the Canadian delegation in 1905 and 1906. I was also concerned in the 1908 and 1918 investigations; and we then gave this matter a great deal of thought, and it is certainly a great fishery question. It is the biggest fishery question in which Canada and the United States are concerned with. There is not a question of doubt in anybody's mind who knows the situation that we have in this province a water shed that can produce more sock-eye salmon than any other watershed in the world. It did put out, and it can put out again such a quantity of it is sufficiently protected. We are concerned in the matter of reaching some agreement with the people to the south that will direct every interest in the State of Washington or United States Government to handle this question. It was originally taken up in 1905 by Canada and the State of Washington, and it is a matter of record that following a long investigation—conferences here and in Seattle, that both Canadian and American commissions were unanimous in their findings—unanimous in their recommendations to their governments; and they drew up that agreement, and Canada approximately accepted that agreement; and as Mr. Darwin related, that agreement went to the Legislature of the State of Washington. There were joint meetings held over there, and the matter was heard again, and I was asked by the Senate over there to address them on the subject of that agreement of 1905. The Senate of the State of Washington passed that agreement unanimously, the Senate at Washington, D.C. rejected it. Canada turned to the Federal Government, and they helped to make arrangement with the Federal Government which they couldn't make with the State government. It is immaterial so far as Canada is concerned where the final powers rests, with the State, or Federal governments; but we are most concerned that it rest somewhere, and that authority shall be given to someone south of the line to deal with this question. If Mr. Darwin can put through such a measure as that through the State of Washington, or if the Treaty in Washington, D.C., can be made so that there will be jurisdiction in the matter, that is what we are after. We are not concerned whether the power is with the Federal Government, or with the State Legislature, but we do want some authority on the other side of the line that is given power to deal with this question, and as quickly as possible. Mr. Darwin's suggestion that he can put it through if it is possible for the State of Washington to delegate its powers to a commission. I hope that every effort will be made by the people to the south of the line to get the people on the south of the line to do that. There is no doubt in anyone's mind who knows any-

thing about the conditions on the Fraser River, who knows that if we can only seed the fish in the Fraser River, that we can produce the runs of that record season. That is the biggest question that concerns the United States and Canada jointly. (Applause.)

The CHAIRMAN: Is there any other gentleman here that can give us some opinion on this able paper of Mr. Darwin's?

DELEGATE: The whole thing has been referred to in the paper. As I understand it, the Chairman himself has to read a paper on administrative points which would open up the same problem. Mr. Babcock has his paper on the Fraser. I think we will get at it better if we hear those papers first, before we go into a general discussion of this question. I think Mr. Darwin's paper is very able, and I think the administration board he has tried to get is very good, not only on that side, but on this side. It should be put into the hands of a commission to devote all their time to this question.

MR. HARPELL: Mr. President, I have a great deal of pleasure in moving that this convention tender a vote of thanks to Mr. Darwin for the very able paper he has presented; and if I might be permitted to occupy a few minutes of your time, I would like to suggest that you consider going back one step further. Mr. Darwin suggested that an effort be made to formulate some satisfactory arrangement between the States. Would it not be well—it may be rather Utopian to anticipate that the industry on both sides of the line can come to an agreement that can be completely satisfactory, would it not be possible for the organized industry in the State of Washington and the organized industry in the Province of British Columbia to appoint a committee that might be empowered to make suggestions which would be most acceptable to the industry on both sides. They might also be empowered to bring such facilities as would be necessary to carry out those suggestions. After all, the law must be based upon the consent of the people who are expected to obey the law. This is always true with domestic legislation and it is necessarily more true with international matters than with domestic matters. That joint committee might have power to do anything, including the making of agreements. They will not be able to supply everything, but it might be a good way to start things. I have very great pleasure in moving a vote of thanks.

MR. BABCOCK: I second that motion. Mr. Darwin and the gentlemen to the south have come here at some inconvenience. There can be no question of doubt in anyone's mind down there that Canada has been and is still prepared to meet that question. She will go just as far in that matter as the people to the south will go, and a little bit further.

The CHAIRMAN: Mr. Darwin, I hardly think it is necessary to make any further comment, as expressed by the meeting—it is clearly shown that the paper has been very much appreciated.

A DELEGATE: Mr. Darwin; speaking with regard to immature salmon: I think it would be very nice to have something from Dr. Smith on that, because the question of the use of immature salmon is something that affects people on both sides of the line. If he could give us some information on that, I think it would be interesting and helpful to us all.

The CHAIRMAN: We have with us Dr. Victor Smith, of the University of Washington, and while our time is getting short, it is suggested that in the course of ten or fifteen minutes we will have to leave here, that some other papers which are on our programme to be taken up, that we had better have them on our trip, while we are on the cruise of the "Capilano." I think it might be as well to ask the gentlemen who were to give us their papers, if they will do so on board the "Capilano," and thereby make our trip the more enjoyable.

THE TAKING OF IMMATURE SALMON—DR. SMITH'S INVESTIGATIONS.

DR. SMITH: Mr. Chairman and gentlemen, I didn't expect to have anything to say at this meeting at all. I came here merely as an observer. But since I have been called upon to make a statement, I will do so. I worked on the problem of the taking of immature salmon, the year before last, and all last summer, and the figures I have, I think, are of very grave importance. I will simply give you a few of the facts in as brief a time as possible. First with regard to the question of taking immature salmon, which, of course, is a very serious problem. There is a fleet of some two thousand boats fishing, taking salmon under five pounds in weight. The Chinook Salmon, as they call it down there—I was able last year to collect figures from the catch of twenty-six trollers throughout the entire season, and I have figures of their daily catch; but I have summarized it, and the total loss from those twenty-six trollers in young fish taken under five pounds in weight for the months in which that check was made, were June and July, amounted to 44,948 pounds for twenty-six trollers. The fleet was estimated at two thousand. To be conservative, I put it at fifteen hundred. The estimated loss to that fleet would be 2,595,506 pounds, for a period of two months in taking young spring salmon under five pounds in weight. Now it is time the immature salmon over five pounds in weight was spoken of. If they take immature salmon, in the third year of their age, and fourth year of their age—I have examined these fish and have found out that many of the salmon that were weighing from twenty and thirty pounds were still immature. This salmon, if it had remained longer, would have become some of the larger fish, running up to fifty and sixty pounds. I made an estimate of the catch within the mouth of the Columbia. I had the opportunity of getting photographs, which showed that the average weight of the spring salmon within the mouth of the Columbia was about twenty-two pounds; and with that as a basis I found that the immature salmon caught weighed over five pounds, and amounted to 42,409 pounds for those twenty-six trollers, or an estimated loss for the entire fleet of 2,447,000 pounds—a total loss for the twenty-six trollers at the mouth of the Columbia of 87,393 pounds, and an estimated loss for the fleet of 5,420,576 pounds. That is the history for the taking of immature Chinook salmon at the mouth of the Columbia. Quite a number of those were taken inside the mouth of the Columbia. I tried to determine how that could come about, since the mouth of the Columbia was supposed to be fresh water, and I analyzed the water and found that at high tide usually the salt water came in there practically in the same condition as it was outside, so far as its salinity con-

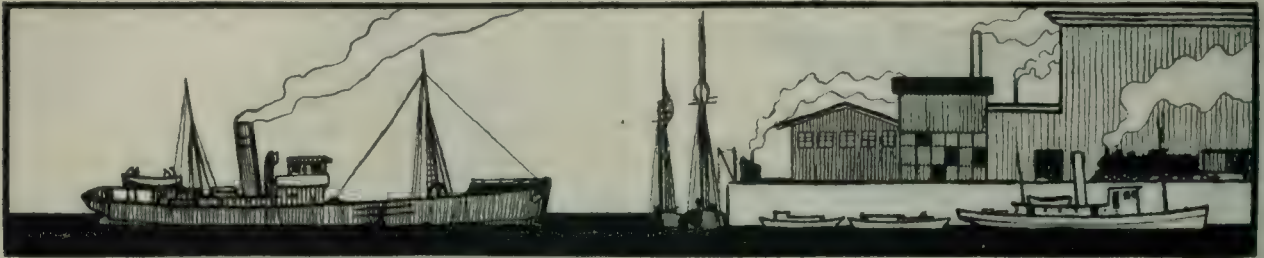
tent was concerned, and so far as its temperature was concerned; so that large numbers of these young fish, sweeping in, were swept on the banks. The silver salmon taken at the mouth of the Columbia is of interest too. They begin taking them early in the period. In June they weigh about three pounds. They went up week by week and month by month until in November those fish average thirteen pounds. A little over thirteen pounds was the average for the same fish in November. You can see what steady growth there is there. All these fish that were caught prior to the beginning of August, were much under weight and represented a very large loss in silver salmon, but you are more interested in what is taking place at Neah Bay, because the ocean out there is tributary to British Columbia as well as to our State of Washington. Now, I have the catch for one hundred and ten trollers—their daily catch of Chinook salmon and silver salmon. Of course they catch practically nothing else. The loss in Chinook salmon was very great. I haven't the final summary of them. The average weight for the Chinook salmon caught during June and July, that is the last week of June and the first three weeks of July, was 14.9 pounds. Compared with the entire catch from these traps, and I was able to estimate,—I found that the loss there is practically seven pounds per fish; and those trollers caught 24,122 fish during that period. The next month they caught 12,812 fish; and the loss during that month was four pounds per fish. The following month, 7,000 fish with a loss of four pounds per fish. The next month, 2,000 fish, with a loss of eleven pounds per fish; and then the last month, in October, there were only about 136 of them caught, and the loss was not so great—about six pounds.

Now, with reference to the silver salmon caught out there: They were all in their third year, and these ten trollers began to work about the middle of June. During the first four weeks they caught 18,904 lbs.; and the average weight of them was 6.29 lbs.; while in September and October the average was practically 10.5 lbs., a loss of over four pounds per fish on 18,000 fish; and then you want to multiply that by at least five in order to estimate the total loss for the nearly six hundred trollers that are fishing from the American side and I don't know how many from the Canadian side in those outside waters. The next month, four weeks, they caught 17,000 fish with an average loss of an average of three pounds per fish. So that for the entire fleet we had a loss out there of practically 1,000,000 lbs. of silver salmon taken under weight during the months of June and July. After August, 1919, the fish suddenly went up in weight. August, 1919, they averaged 8.3 lbs. A week later they averaged 10.5 lbs. A jump of over two pounds in less than a week, and that heavy weight continued throughout the rest of the season; so that practically before August, 1919, they were catching these small sea salmon. That the jump was due to the fact that there was a migration of fish out there, it is true. The average weight for the whole season was 9.2 lbs. for the silvers. In quoting this, the Pacific Fisherman, I think, says they averaged about 6 lbs. on the inside, but these first two months as compared with the last two months, show a tremendous loss of those young fish. But the most serious waste of all, so far as I can see is that of the young fish taken in the early months of the year, April, May and June.

in the Puget Sound. There are hundreds of tons of young silvers and some Springs taken there that weigh from one to one and a half pounds when dressed. These fish would weigh at least six or seven pounds if left until the Fall; and it seems to me it is a criminal waste of fish to permit the taking of this immature salmon. (Applause.)

The CHAIRMAN: We are very much indebted to Dr. Smith for the remarks he has made here this

morning, and we feel sorry we are unable to give more time to this subject, because I feel we are just getting warmed up to it. We must close our meeting now, as we have to arrange to get down to the Canadian Fishing Company's plant by twelve o'clock, and then there is a luncheon at one o'clock, and the cruise on the "Capilano" at 2.30. Are there any suggestions before we adjourn this meeting? If there are no suggestions, I declare the meeting adjourned.



Delegates Visit Modern Pacific Coast Fish Establishment

INSPECTION OF CANADIAN FISHING COMPANY'S PLANT AND SALMON CANNERY

One of the most enjoyable features of the Convention was the inspection of the Canadian Fishing Company's plant and the Home Cannery. While naturally of interest to the men-folk, it is doubtful whether they enjoyed the visit any more than did the ladies. The men had seen fishing establishments before, but very few of the many ladies present had ever set foot inside of one.

Never in the history of the Canadian fisheries has a tour of fishing premises been conducted under better auspices. Plans for the inspection of the plant had been made weeks before and Mr. A. L. Hager, President and General Manager of the Canadian Fishing Company, Limited, had made up his mind that the visitors would see all that there was to be seen regardless of trouble, expense and the fact that it was the off-season for salmon and a quiet week for fresh fish.

The Canadian Fishing Company's plant is located on the Vancouver waterfront and the Home Salmon Cannery connected with the establishment is the only cannery situated within the confines of a large city. At noon on Friday, June 4th, the delegates, guests and their ladies were whirled away in automobiles from the Hotel Vancouver and landed within the gates of the Canadian Fishing Company's premises on Gore Avenue Wharf. Here they were collected into small parties and taken in charge by a well-trained guide.

Through every department of the huge plant the guests were conducted. The steam trawlers and liners, the gasoline halibuters and seiners and salmon boats at the wharf—gay in bunting—were inspected first and the guides led their parties through the rooms where the fresh fish were landed, cleaned and packed for shipment to market. The trail of the sea food was followed from the landing tables throughout the various stages for preparation for market and the diversity of operations caused much wondering comment. "We had no idea there was so much to this fish business!" was a common remark from the fair ones as

they wandered from shipping rooms to pickling rooms, salteries, smoke houses, sharp freezers and cold storages. The more sophisticated men-folk made but little comment but kept their eyes open for "new stunts" and asked keen practical questions. When your fish man is impressed he shows his admiration by silence or by a terse "They got it down pretty fine round this outfit."

Lying at the inner dock was the gasoline halibuter "Tom and Al," discharging a trip of eighty thousand pounds of halibut. The "Tom and Al" was fishing up off Alaska a week previous and would have possibly landed her trip in Ketchikan. But Al Hager wanted to show his visitors a halibut schooner discharging her catch. He got the skipper of the "Tom and Al" by wireless and induced him to run his catch eight hundred miles down the coast to Vancouver. The schooner timed her voyage to arrive in just about the time the visitors arrived at the plant.

It was the off-season for salmon canning and in the natural course of events, the salmon cannery would be silent. Mr. Hager had made up his mind that a salmon cannery in full operation would have to be shown. In order that this might be possible he had to arrange for a gang of men to run the cannery and only secured them after much trouble and monetary inducement. As for the salmon—well, they got the salmon, but, as we are all fish men here, we'll spill the beans—they were frozen cohoes defrosted. The ladies and the uninitiated marvelled and dilated upon the beautiful fresh fish which was being run through the canning machines but the "old wise gang" kept silent and mentally complimented their host for the trouble he had taken to make a show.

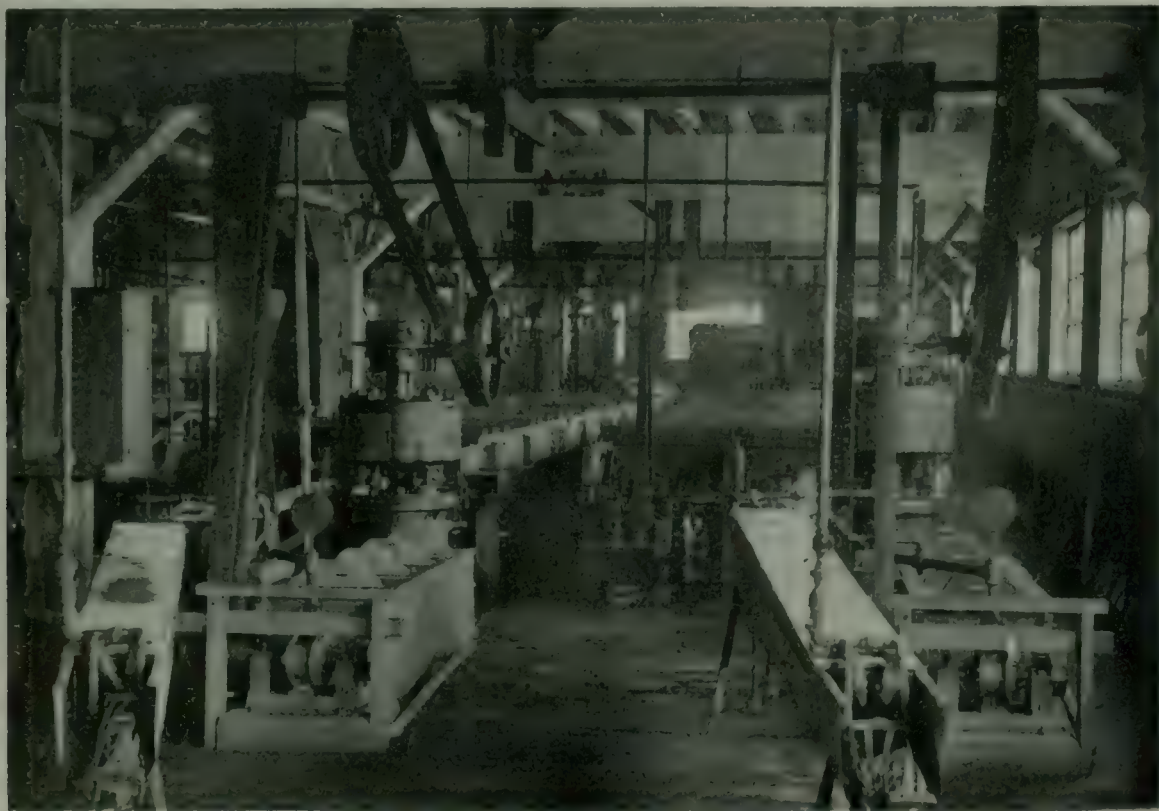
They "do" things in the West. The word "impossible" is not in their dictionary. Those of the visitors who had fishing plants of their own could pretty well guess what Mr. Hager had to do in order to show a complete sequence of operations as there are no fishery

establishments where they are doing every branch of the business at one and the same time. The work is largely seasonal, but in the Canadian Fishing Company's plant during the visit they arranged to have gangs of men and women doing a little of everything. Halibut were being landed, weighed off, dressed, boxed and iced and loaded into cars, or glazed and packed in the freezers. Salmon were being eviscerated, slimed and clipped in the "Iron Chinks" and packed in cans by a series of operations mechanically marvellous: salmon were also being split and prepared as "mild cured." Sablefish, in another department, were being manufactured into smoked fillets and chunks, and herring were shown from the raw fresh fish throughout the processing stages to their packing in boxes as bloaters and kippers.

The various parties were led throughout an endless succession of rooms where busy hands or whirling ma-

was a natty menu card in gilt type and engraving and everything was on the table just as it should be. The menu itself would have done justice to any first class restaurant and it was practically all fish—the products of the Company.

The writer has had, on many occasions, to eat fish, figuratively speaking from "soup to nuts" and became rather surfeited, but at the Canadian Fishing Company's luncheon they introduced you to it very pleasantly by way of a crab cocktail with *sauce ravigotte*. Following this introduction one was presented to a delicious shrimp salad with Thousand Island dressing, and when this was disposed of you met the *piece de resistance* in the shape of a British Columbia fish dinner—a real honest-to-goodness plateful of kippered sablefish, fresh halibut and spring salmon. Shades of Lucullus! How the Epicureans of old would have smacked their lips! Discharging your obligation to



Interior View of Home Cannery.

chines were doing something to fish either to preserve them to increase their palatability. From the huge departmental store of a commissary where they keep everything from a needle to an anchor, or from canned asparagus to fresh beef, they toured through the machine room and power plant and finally emerged up in a spacious cannery loft where tables were laid for three hundred guests and a cabaret orchestra was making the rafters echo to syncopated "jazz" and Ernest Ball's latest.

The luncheon at the cannery was the crowning effort. Just imagine it! The tables, chairs, linen, cutlery, china for three hundred persons had to be transported down to the plant and all the food had to be cooked on the premises! But to Hercules Hager and his staff of Trojans, these were merely incidentals—a part of the day's work. And the luncheon was no brown bread and bean feast. By no means. There

the fish portion of the menu, one "clewed up" an excellent lunch with crushed strawberry ice and cake and felt content to moralize while a sweet-voiced cabaret singer carolled an accompaniment to the rumbling of an ice-crusher, and the orchestra essayed the sobbing saxophone stunt in "Dardenella" to the slop of the "Tom and Al's" halibut on the landing stages.

The orthodox coffee and cigars came along, and the Genii of the Lamp, otherwise Mr. Hager, rose and addressed the gathering:

"Since our Convention was opened yesterday," he said, "you have heard so many speeches of welcome. Now that my turn is at hand, I find there are very few nice words in the vocabulary to make use of. Suffice it to say, we are all very pleased to see you with us today, and on behalf of my company I wish to say to you that we are very much honored at the large and representative gathering that is here today, in

*Plant of Canadian Fish Producers*

response to our invitation. The plant that you have visited here is a typical Pacific Coast fishing company's plant, and it is to be regretted that it is impossible to show all of our visitors and guests the large and most important part of the industry, namely, the catching of the fish itself. I am not going to make a speech, I am not going to inflict that upon you just now. My turn will come on Saturday evening. I promised not to talk fish to you, because if I start on that subject I might detain you quite a while. However, there is an item of interest that I might call to your attention, and that is the fact that the halibut vessel which you see discharging, is a typical halibut schooner, and has reached the port again after sailing a mileage representing about the distance between Vancouver and Halifax, a distance of four thousand miles. This little vessel, or the halibut boats that go to the Alaska halibut banks, are going a distance of 1,600 to 1,800 miles, from Seattle to Vancouver to the fishing grounds, and a like distance in making

the return trip which equals a distance of about 4,000 miles, the distance from Vancouver to Halifax. Now, ladies and gentlemen, we are here today for pleasure. We have a trip on the steamer before us, and in closing let me say to you that if you have enjoyed yourself as much in visiting us, and partaking of our hospitality today as we have in having you with us, everything is 'jake,' and everybody is satisfied. (Loud applause).

MR. J. J. HARPELL: I am quite sure you all feel as I do, and on your behalf and on my own, I am going to take the liberty of giving expression to the feelings of gratitude that we have for the hospitality we have received from Mr. Hager and his Company. We have had it ever since we came to Vancouver, but it has been particularly accentuated during the last two hours. I take great pleasure in your behalf in moving a vote of thanks to Mr. Hager and his Company, and I ask Mr. O'Connor of Montreal to second the vote.

MR. O'CONNOR: Mr. Chairman, ladies and gentle-

*In the Herring Department.*



Company, Ltd., Vancouver, B.C.

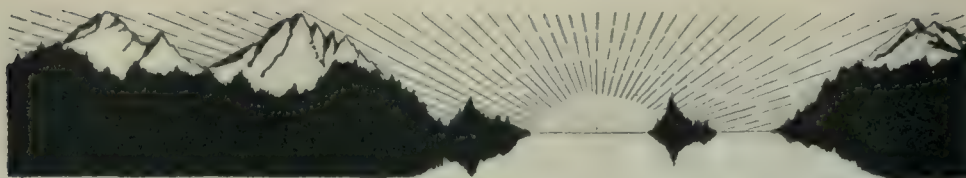
men, I made no Irish bull when I came to this Convention. That is the one thing I will remember in my life as a wise act. I might say before seconding the vote of thanks there is one thing that stand out most prominently in my mind; the reception we got in Vancouver. It was not only the style of intertainment, but the wholehearted and the wholsouled manner in which it was done. We will remember that as the way the Vancouver boys received us. If they see us standing a minute we are grabbed and shoved into an auto or entertained in some way. We will never forget the spirit that has prevailed during our visit. When we get back to our homes in the East we will try and aspire to the high standard you have all established.

We, in the East had no idea how colossal this thing was, we will go back to our little communities and dream of the things we have seen in Vancouver in this plant, and not the least delightful pleasure, was the meeting of our host's family, from Mr. and Mrs. Hager down to the smallest member of that excellent family. I have very great pleasure indeed in seconding the vote of thanks to Mr. Hager and the Canadian Fishing Company."

When the three cheers and a tiger for Mr. Hager had died away, the party made their way to the wharf and boarded the Union Steamship Company's steamer "Capilano" for a cruise to Indian River and return.



Interior of Home Cannery.



THE CRUISE TO INDIAN RIVER

DELEGATES AND GUESTS ENJOY AFTERNOON SAIL
UP BURRARD INLET



Friday afternoon at 2.30 p.m. after leaving the Canadian Fishing Company's wharf, the Conventioneers boarded the trim little steamer "Capilano" which the Union Steamship Company of British Columbia kindly loaned to the Canadian Fisheries Association for a cruise. The embarkation of the Fishery Pilgrims was accomplished in modern fashion with three movie camera men turning the cranks and Lieut. Charley Julian acting as a sort of a Marine Moses.

Casting off from the wharf, the steamer headed up the inlet for the second narrows while everybody was getting settled near observation windows or in the lee of something. The male members seemed to rapidly vanish from the decks soon after the ship started and enquiries as to the whereabouts of absent friends elicited the enigmatic answer that they were probably down for'ard. Which, of course, aroused natural curiosity, and one went "down for'ard" too.

Experience on many water trips—especially at Conventions—leads one into the belief that much of the scenery is viewed from such quiet corners as "down

for'ard" and the admiring comments on the beauties seascape and landscape consist of terse "Say when's" and "Here's how's." Possibly, on these occasions the heart is so full of Nature's marvels that lengthy vocal adulation is superfluous.

But all levity aside—the trip was really wonderful and reminded one much of the rail journey through the gorges of the Rockies. As the steamer made her way up the Inlet, the mountains crowded the placid waters into a narrow defile and to starboard and port the great peaks thrust up their serrated crests into the clouds and seemed to frown upon the little vessel skirting their rocky bases. Waterfalls, fed from the melting snows, splashed down their steep flanks or leaped, spun by giddy heights into a bridal veil of liquid drops, over mighty cliff walls into the silent sea.

Vista succeeded vista as the steamer forged up through this fjord of the Pacific Coast and the eye could scarce encompass the many beauties of the rank-ed mountains, the snow-clad peaks glistening in the sun, the dazzling greenery of the mighty trees and



Salmon Going Through the "Iron Chink," Home Cannery.

the fairy-like wisps of vaporous clouds clinging half-way down the slopes. But, alas, stern business and a soul-less Secretary and unimpressible Chairman must needs interrupt the contemplation of Nature's glories both on deck and "down forward," and the delegates were haled into the main saloon to tackle business. The orchestra "knocked off" as President Brittain called the gathering to order.

The CHAIRMAN: Ladies and gentlemen, we were unable this morning to finish some valuable papers which had been prepared for our morning session, and to enable us to continue our work this evening and tomorrow, we thought it best to call upon one or two of the gentlemen who have taken much trouble in preparing some of these papers. We have with us, Mr. Noble, who has kindly consented to read a paper

by Mr. De Long on "Fire Insurance as Pertaining to the Fishing Industry."

MR. NOBLE: This paper was originally to have been read by Mr. De Long, but as Mr. De Long's voice has left him, I have consented to read the paper and to enter into any discussion which may follow. Knowing the retiring disposition of Mr. De Long who is unable to read the paper on account of the loss of voice, he has asked me to deliver his paper for him. Now, I was told, confidentially, that Mr. De Long had acquired laryngitis by trying to induce Mr. Hager to place insurance on his Ketchikan plant. I wish to thank you all on behalf of Mr. De Long for the honour given him of reading this paper. The title of Mr. De Long's paper is "Fire Insurance as Pertaining to the Fishing Industry." (Reads).

Fire Insurance As Pertaining to the Fishing Industry

By

A. Z. DELONG, Terminal Agencies, Vancouver

In writing this paper on Fire Insurance as pertaining to the Fishing Industry it is not my intention to give you a technical treatise on this subject, nor to delve too deeply into the Policy Contract, nor the history of the business, because in order to do so I would have to have much more time than is at my disposal, but rather to touch on a few general subjects that I believe are often overlooked by the public in general and by those interested in the fishing industry in particular.

The first item I am going to call your attention to is the contract contained in the policy itself. A great many business men—and especially the smaller insurers—do not realize that a fire insurance policy is a legal contract entered into by an insurance company and the owner whose property is insured. In this contract, the company agrees to re-imburse the assured for certain losses on the payment of a certain premium, provided the assured lives up to certain warranties and conditions as laid down in the policy. How many men receive their policy from their fire insurance broker or agent look at the outside of it, see the amount for which the policy is written and the premium attached thereto, throw the policy into the safe with other policies, send the agent a cheque for the premium (if he does not forget it), and never looks on the inside of the policy to see how or in what manner he is covered, and therefore does not realize that in case of loss this scrap of paper may stand between him and the poor house. All policies contain certain Statutory Conditions which are fixed by law, but in addition to this, other conditions are added to make the policy applicable to the particular risk to be covered. These are attached to the regular policy and are called "Forms" or "Wordings," and may give to the assured certain broader policy conditions and privileges under his contract, which he might not otherwise have. It is most important that these forms covering on the same risk should read alike and be absolutely concurrent, as otherwise, in case of loss, a serious difficulty might arise in making the apportionment of the loss as between the various companies interested. So, scrutinize the form and watch your policy conditions, see that they are concurrent and

that your interests are fully protected, be careful to always live up to your part of the contract, so that in case of loss there will be no question as to whether or not you are perfectly covered. In connection with the forms which I have just mentioned, your attention is called to the fact that these are drawn by various agents and brokers in a great many different ways, but by these forms is indicated the way in which your insurance actually covers, and are of great importance.

There are various ways of covering property, but two to which I wish to call your particular attention—what is known as "Blanket Covering" and that which covers specifically on the different items. For instance, you may have two or three buildings which adjoin. These buildings can be written, under Tariff Regulations, as one risk, but a great many times you will find that the agent has written these buildings as separate risks—naming a specific amount to each one. It is to your advantage, however, to have this insurance cover as one risk—in other words—blanketing the insurance to cover on all risks, because if you do this, in case of loss the total amount of insurance can all be applied to one building, while if the insurance covers specifically you can only collect for the one building up to the amount of the actual insurance placed on that building. The same remarks apply to stock. Always have your policy cover as much of your risk under one item as is permissible, and eliminate specific insurance as much as possible, this is to your advantage.

We now come to the question of carrying Blanket Insurance on buildings that are not attached. In this case it is necessary for the assured either to write his insurance with co-insurance or with the Distribution Clause. A great many assureds carry co-insurance on their property, without knowing what co-insurance means. Briefly, the Co-insurance Clause is as follows: In consideration of the reduced rate, or the special form under which the policy is written, it is stipulated and made a condition of the contract that the insurance company shall be liable for no greater proportion of any loss than the amount insured under the policy bears to a determined percent-

age of the actual cash value of the property described in the policy. In other words, inasmuch as the company is writing your policy at a lower rate, or granting you certain concessions in the way of form, you agree with the company to carry insurance up to such percentage of the value of the property as is mentioned in the policy—which is generally either 80 or 90 per cent. Failing to do this, you agree to become a co-insurer for the difference between what you do carry and what you should have carried.

For example, you have property worth \$10,000.00 and agree to insure for 80 per cent of that value—you therefore should carry \$8,000.00. You do carry \$8,000.00 of insurance and you have a loss of \$4,000.00—the company in that case would pay the total amount of the loss, because you have lived up to your agreement with the company, and have carried 80 per cent. of that value. On the other hand, you have \$10,000.00 worth of value; you should carry \$8,000.00 of insurance; you do actually carry only \$6,000.00. We will assume that you have a loss of \$4,000.00. In that case the companies will pay 6/8 of that \$4,000.00, and you have to stand 2/8 of that loss yourself. The reason why the insurance companies have such a clause is because they can afford to insure certain classes of property at a lower rate and with better policy conditions, if the assured will agree to carry enough insurance to make it improbable that the companies will be called upon to pay the face value of the policies, or total loss to them, when only a portion of the property is destroyed. Assuming that the rates are the same with and without co-insurance, and that two men each own buildings side by side, we will assume that the buildings are worth \$50,000 apiece and the insurance company issues a policy for \$10,000 on each building. Supposing that the first man carries a total of \$40,000 insurance on his building, and the second man carries but \$10,000. A fire occurs and damages each of these buildings to the extent of \$10,000. Both men are paid in full, but in the one case the company who carried \$10,000 on the building which is insured for \$40,000 only contributes \$2,500 towards the payment of this loss, while in the other case—where they have the full \$10,000 and that is all that is carried, they have to pay the face value of the policy. Had this company issued a policy for \$40,000 on the first building, they would then have paid the whole \$10,000 loss, but they would only have paid a quarter of the face value of their policy, while they would have received a premium on \$40,000. So the companies feel that the man who carries more insurance is entitled to a lower rate than the man who carries more insurance is entitled to a lower rate than carries a smaller amount of insurance, inasmuch as the chances are much less that the insurance will all be paid out. This plan of insurance is becoming generally adopted on certain classes of risk, and while co-insurance is not allowable on dwellings, farm property and some classes, still on mercantiles it is becoming quite general. It is a question that is largely misunderstood by the insurers, and it is one that you should go carefully into before allowing it to be made a part of your policy.

Another clause which is of special interest to owners of cold storage plants is that clause known as the "Consequential Damage Clause" or "Cold Storage Clause." By consequential damage is meant damage which is caused by the interruption of the cold storage machinery by fire, which allows the temperature

in the cold storage plant to rise and damage the goods stored therein. This might happen even though no fire, smoke or water came in contact with the goods, or anywhere near the cold storage plant in question. It should be specifically stated on all policies covering goods in cold storage whether or not it is the intent of that policy to cover consequential damage, and while under the ordinary policy the companies would undoubtedly deny liability for consequential damage—even though there was no clause on the policy—still, this would probably result in hard feeling between the assured and the company in case of a loss, with the claim denied. It is therefore important, where consequential damage insurance is desired, that two sets of policies should be written, so as to prevent complications arising out of non-concurrence or the question of contribution. The companies assuming the fire risk should except any loss due to consequential damage and those companies who are writing the consequential damage should have a special form of policy covering this particular portion of the risk.

In speaking of hazards generally found in connection with canneries, that of gasoline particularly comes to our notice. In many canneries gasoline is stored in close proximity to the main plant. This constitutes a severe hazard, with the added possibility of making insurance policies void.

Mostly the gasoline fishing boats and tenders procure their fuel supply from the cannery out of which they operate, which necessitates large quantities being on storage. As those who are in the habit of daily handling this dangerous liquid rarely consider its hazard, where feasible, a separate wharf for the storing and handling of all oils should be erected, or other proper precautions taken for the handling of the same. A point to bear in mind is that metal drums are not sufficient protection and that empty containers should be more carefully handled than full ones, because the danger from these is greater.

Care should be taken, also, in the handling of lacquer. Not more than one day's supply should be kept in the cannery building, and in no case should it be used or handled when any fire or open light is burning in the vicinity.

The following precautions and suggestions are brought particularly to your attention:

"All electrical equipment should be properly installed and inspected periodically.

"Metal drip pans should be provided for all bearings.

"Steam pipes should be at least two inches from woodwork and main steam lines covered around with asbestos slag and wrapped.

"Lamp or lantern room for filling and storing lamps or lanterns should be in a separate building.

"No smoking should be allowed in buildings and signs to this effect should be freely posted.

If sanitary cans are not used, soldering equipment should be so arranged that any hazard from the same would be eliminated. Woodwork in and around all soldering machines and furnaces should be protected by metal at least two feet on all sides of fire doors, and brought up at the back to meet the brickwork. All pots should have water pans under and same kept filled with water when not in use. Benches should be

covered with tin or other metal and should be bent up at least six inches at the back of the bench. Metal stacks from soldering machines or pots should extend to not less than three feet above the apex of the roof and properly protected where passing through or near woodwork.

"The blacksmith's forge should be set out from the wall or other woodwork and floor protected with metal and metal hood provided.

"Gasoline or naphtha engines should not have their tanks attached to the base of the engine or hung under the wharf or cannery. Supply tank should be buried not less than four feet underground and not within five feet of any building. The engine should not be used below the grade or first floor of the building and the gasoline should be forced directly from the tank to the engine by pump. The engine room should be well ventilated at both the floor and ceiling.

"The plant at all times should be kept clean and a daily inspection of same during the packing season should be instituted for that purpose.

"All fire fighting apparatus should be given the best of care and always ready for instant use should fire occur.

"Canneries having smoke-house in connection therewith should have proper arrangements for taking care of this hazard. If possible, the smoke-house should be of fire resisting construction and communications, if any, to main building should be protected with standard fire doors. The sill in openings on firing floor should be at least twelve inches in height and a drain should be provided to carry oil drippings away from the plant. Steam jet should be provided for fire protection.

"The arrangement of boilers is an important item. They should be properly set and encased in brick. It is preferable to locate boiler house more than twenty-five feet from the main buildings. Metal stack should be at least twelve inches clear from all wood-work and wood floor not nearer than six feet from boiler front.

"Web or net tarring vats especially if fire heat is used introduce a distinct hazard. This should never be attempted in or near the main buildings, nor should freshly tarred or oiled nets be stored in cannery or within one hundred feet thereof. The oiling of nets is a serious hazard and great care should be taken in this regard."

The question of fire protection is one that enters largely into the matter of your rate. In cannery plants the water supplies would depend largely upon the size of the plant and the surrounding conditions. There should be a good gravity or pump supply. If gravity supply, to be of sufficient capacity to insure the maintenance of the required number of fire streams, with fifty pounds flowing pressure at the nozzle, for a period of at least two hours. If pump supply, the pump should be of not less than 500 gallons per minute, one of the Underwriters' Standard, and should be equipped with automatic regulator, lift to be not more than twelve feet, steam pressure to be not less than fifty pounds to be maintained for the pump at all times during the operating season. This pump should be located in a detached pump located at least forty feet from the main buildings. The distribution main should be not less than six inches in diameter. Hydrants should be two-way, 2½

inch, located not less than forty feet or more than one hundred feet from any building and sufficient in number so that it would not be necessary to string more than one hundred feet of hose to reach any part of a building. Fifty feet or more of two-inch hose, with one inch nozzle should be attached to each hydrant. These hydrants and hose should be protected with good substantial hose houses, and should contain wrenches, spanners and whatever tools are necessary for prompt action in case of need. Regular inspection and tests of the hydrants and hose should be made, at least once every two weeks. These hydrants should also be protected in a cold climate against freezing.

When it comes to the inside system, supply mains should not be less than four inches in diameter. Standpipes should not be less than 2½ inches. All valves should be two inch and should carry fifty feet of No. One two-inch linen hose, with one-inch smooth nozzle attached to each valve. The underwriters' standard for a cannery is one inside standpipe for every 5,000 feet of floor area. All of this equipment must be of first grade, in order to pass the underwriters' standard. Also, in case the standpipe is not practical, one 2½ gallon fire-extinguisher for each 2,500 square feet or fraction thereof of floor area, and one cask or barrel with two fire pails attached thereto, for every 2,500 square feet or fraction thereof, on each floor. The underwriters ask that these casks be painted red so as to be made very conspicuous. The capacity should be at least 40 gallons and in a cold climate forty pounds of common salt should be dissolved in each cask. Two fire pails should be hung with each cask. It is better to have round bottomed pails so they will not be used for ordinary purposes and thus be out of place in an emergency. These pails also should be painted red and marked with the word "Fire," so as to insure their use for fire purposes only. They should be placed so that they will be constantly in sight and should never be covered with stock or rubbish. They are best located near exits and stairways. In the case of the extinguishers, regular inspections should be made and the extinguishers should be re-charged at least every six months. Suitable tags should be attached to these extinguishers bearing the date of the last inspection and when they were re-charged. All fire protection equipment should be put in charge of the foreman or engineer, who should be held responsible for their condition.

As stated at the beginning of this paper, the question of fire insurance in connection with your particular industry is a big one, and I have only touched on some of the more important items in a very brief way. There are many other things which could be discussed at length and which would be of interest to you. It is my belief that it is good policy for any insurer to appoint a firm of competent brokers or agents to look after their insurance for them. By so doing, this agent will receive enough remuneration so that he can afford to devote the proper time and attention to your insurance matters, which they deserve. He can act as your insurance adviser and keep your policies in order for you while if you scatter your insurance around to a dozen different agents or brokers, no one of them is going to take the interest in your risk which they should take with the result that your interests are not looked after to your best advantage.

MR. NOBLE: How many of you ladies here, wash your gloves in gasoline? Yet gasoline is much more dangerous than dynamite. You should be most careful only to use gasoline in your back yard. There is one point again that has occurred to me; the last cannery has not yet been built in British Columbia by any means. To those of you who contemplate building, whether a cannery, storage plant or herring saltery, let me point out to you that it is certainly to your advantage to discuss your rate before you build your cannery.

Many times we find in our business that buildings are erected without any consideration as to the insurance rates. When you figure possibly that your building will stand anywhere from one to twenty years, ten cents in the rate means a difference to you. I would say it is a most important thing, before you make any important changes, that you should consult some authority who can advise you the best way to handle your particular hazard. With these words, ladies and gentlemen, I thank you for the opportunity afforded me. (Applause).

DISCUSSION ON INSURANCE PAPER.

The CHAIRMAN: Before asking Mr. Hager to move a vote of thanks to Mr. Noble, if there are any questions that you might wish to ask Mr. Noble, who no doubt will be glad to answer you. There is one point I want to put to Mr. Noble. Is it any great advantage to those who have insurance at the present time, to make an appraisal of their properties? Most firms on the co-insurance plan, who had a \$10,000 value yesterday, have a \$20,000 or \$30,000 value today, and on the co-insurance plan would be very much in the soup if they a fire. On the question of smoking, I think every member of this Association, when this is published in the Canadian Fisherman, should hand that particular article over to the man who is studying insurance for his firm. They should read and study this question, the question of smoking. You charge that we should cut out smoking in our plants. Isn't it a fact that we put signs in our plants throughout Canada, "No Smoking," but the law doesn't support us in discharging a man for smoking. Are we in a position to discharge a man after we have put up such a sign? I don't think we have a law in this country which would permit us to put up such a sign as "Men smoking will be discharged."

MR. NOBLE: Speaking of the question of smoking first. There is no doubt that the smoking habit is universal; we must recognize that. During my inspection visits to various places, I find that those who are well advised have a place where their employees can go and smoke. In the canneries you will find that the humble Chinaman will sit behind a case of fish, and if anyone comes along he will throw away his lighted cigarette. The cigarette is the worst thing of all—worse than any other form of smoking. So that there should be some place to throw the cigarette

where it can do no damage. With regard to appraisal. The appreciation of all classes of risks has been so great that it is very difficult to tell exactly what to do, but more especially when the co-insurance is taken. It is more to the advantage of the insured to have some idea of his value. An appraisal, if done by a proper concern, is of very much importance to the insured because he is busy possibly as you are, catching fish.

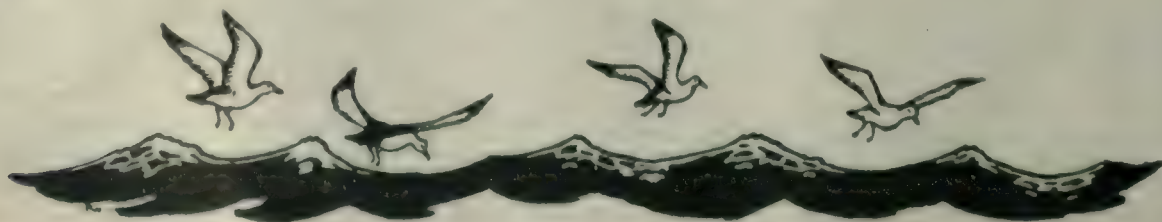
Over eighty per cent of all fires are due to utter carelessness. Fire loss in Canada and the United States today is approximately \$1,000,000 per day. Between 15,000 and 25,000 lives are lost every year due to carelessness. Those of you gentlemen who have large plants have difficulty with labor. You do not want to discharge a man because he is smoking, because he may be a good man. Did you ever tell him to go to a certain place where he can smoke? If you did that it would be very much to your advantage.

CAPT GOSSE: I don't smoke myself, but I draw attention to that fact every day about my cannery. It is the worst thing we are up against.

MR. HAGER: I have been asked to move a vote of thanks to Mr. Noble. My friend Mr. Noble is President and chief patron of the Anti-Cigarette League. I don't think it is hardly fair for him to talk shop. I undertook to stop smoking when he agreed to stop drinking, and I am still smoking. Now, ladies and gentlemen, in whatever success has attended our efforts to see that you have a good time while this convention has been in progress, Mr. De Long has assisted very materially. Mr. De Long has given very freely of his time and has assisted us in financing our entertainment, and has assisted in making this cruise possible, and in the delightful smoker we had last evening. Mr. DeLong was asked by me to prepare and deliver a paper before the convention on a subject on which he is very well posted. You have heard the paper read in the most admirable manner, by Mr. Noble, and I am sure when this paper is published in the Canadian Fisherman it will be read with a very great deal of interest. I take the greatest pleasure in moving a very hearty vote of thanks to Mr. De Long for his very able paper."

The Chairman looked as if he would liked to have tackled some more business, but the audience looked mildly threatening. The loveliest panoramas of British Columbia's coast were to be seen outside and the delegates looked appealingly at the presiding officer. His hard heart was softened and he closed up his letter-case. "We will meet again for business this evening. I declare the meeting adjourned."

The orchestra got to work again, nimble feet glided into dance steps, and outside the scenery-lovers feasted eyes and body with mountains and more material sandwiches and ginger ale. At 7 p.m. the "Capilano" pulled into the dock again and Admiral Julian, commanding a fleet of autos, embarked his Pilgrims for the Hotel once more.





*F. E. BURKE, Vancouver.
Chairman, Vancouver Branch, C.F.A.
Third Vice-President, Canadian Fisheries Association.*



FRIDAY EVENING SESSION

JUNE 4th, 1920



FRIDAY EVENING SESSION at 8 p.m. at Hotel Vancouver. Vice-President A. L. Hager, in the Chair.

The CHAIRMAN: Gentlemen, we will come to order. Mr. Babcock, Assistant Commissioner of Fisheries for British Columbia, has a very important paper to deliver to us on the subject of the Fraser River Salmon situation. Mr. Babcock has to leave on tonight's steamer for Victoria, and in order that we may make

his time fit in, we will ask Mr. Babcock to present his paper now.

JOHN P. BABCOCK: I hardly think I am entitled to much consideration, Mr. President and gentlemen, and I think there are so many papers that are to be heard which are much more interesting and of more value, that I feel I must apologize for accepting your invitation. (Reads paper.)

The Fraser River Salmon Situation. Canada's Position

By JOHN P. BABCOCK

The sockeye salmon fishery of the Fraser River system was formerly the greatest fishery in which Canada and the United States engaged. It was the greatest salmon fishery in the world. During the period from 1897 to 1913 inclusive the Fraser River system produced more sockeye salmon than any other known river system, amounting to a pack of 11,007,125 cases, or a catch of 132,085,450 fish. The runs of sockeye salmon in its waters were formerly greater every fourth year than in all other waters in those years. The runs of sockeyes to its waters no longer constitute a great fishery, but have been so depleted that they are no longer of commercial importance. In other words the Fraser is fished out. Its present condition is "a monumental record of man's folly and greed"—and this is a good time to talk about it for there is a possibility of its restoration in some measure at least.

The causes that have brought about its depletion are fully established, and are no longer questioned by either Canadian or United States fishery authorities. They have twice been recognized in treaties proposed by the Government of Canada and the executive authorities of the United States.

Those who are not familiar with the sockeye salmon fishery of the Fraser are informed that the term "Fraser River System" is used to define all the fishing waters in British Columbia and in the States of Washington which are frequented by sockeye salmon on their return migration from the Pacific Ocean to their spawning beds in the Fraser River in British Columbia. They are also informed that the sockeye that frequent those waters are hatched in the watershed of the Fraser in British Columbia, lie for the first year of their life in the lake waters, then migrate to the sea where they remain and grow until the summer of their fourth year, and then seek to return to the Fraser River basin in order to spawn, and after spawning die.*

Therefore the run of sockeye in any year is almost wholly the product of the spawning of the fourth preceding year.

The Fraser River basin lies exclusively within the

*There are, however, exceptional cases in which fish proceed to sea immediately on hatching, and there are certain but small proportions which return in their third and in their fifth year.

Province of British Columbia and has an area of 90,903 square miles. It contains sixteen large lakes and many minor lakes that have a surface area of 2,351 square miles. No other river on the Pacific Coast drains so extensive an area of lake waters suitable to the propagation and rearing of sockeye salmon.

In the past the Fraser River basin produced every fourth year greater runs of sockeye than any other river basin and in three intervening years it produced, for a period, runs of sockeye that exceeded in number the run to any other stream in British Columbia. As far back as written records exist there has been a phenomenally big run of sockeye to the Fraser every fourth year, a characteristic peculiar to that river that has attracted universal interest, because it was unknown to any other river.

But few people realize what vast numbers formerly comprised the runs of sockeye to the Fraser in a big year. The pack in the four big years ending with 1913 represents an average yearly catch of twenty-millions of individual sockeye, and in each of those years it is estimated that the number of sockeye that escaped capture was as great, if not greater than those caught. If that be so the run in each of these big years consisted of not less than forty-eight millions of fish.

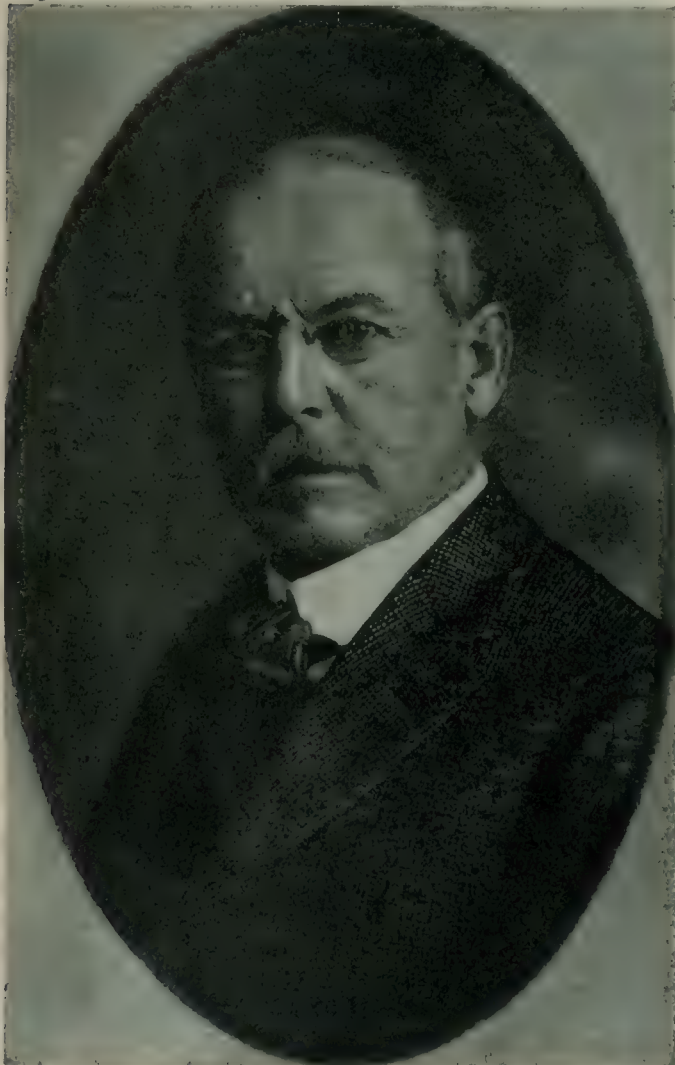
Complete records exist of conditions on both the fishing and the spawning grounds of the Fraser system since 1900. Records of the salmon pack extend back to 1876. The record of the pack shows the total catch, because the entire catch was marketed in tin. The records from the spawning grounds furnish adequate data for a comparison of conditions since 1900. The records in no other river are as complete.

Fishing for sockeye began commercially in the channels of the Fraser River in British Columbia in 1876 and was confined to its waters up to 1890. Fishing was extended in 1890 to the waters of the Gulf of Georgia in the Province of British Columbia, immediately outside the mouth of the river, regulated gill-net fishing only being permitted. Up to 1890 only Canadians under license were engaged in catching salmon in the Fraser River system. The sockeye salmon fishery of the Fraser River system became an international fishery in 1890 when fishing for Fraser bred sockeye began in the State of Washington waters of the system with the installation of traps at Point Roberts. Traps

became a leading method of fishing in American waters in 1897. Purse-nets came into use in those waters in 1901, and in recent years have been greatly increased in number and efficiency.

During the period 1900 to 1913 inclusive, when the industry was at its height in the big years, the catch of sockeye in Canadian waters produced a pack of 4,546,354 cases, and the catch in the American waters of the system gave a pack of 6,460,771 cases, a combined total pack for the whole system of 11,007,125 cases, of which the Canadian waters produced 41 per cent and the American waters 59 per cent.

The record of the pack shows that the catches in the three small years of each four-year cycle began



JOHN P. BABCOCK,

Asst. Commissioner of Fisheries B.C. Government.

to decline in 1902. The catches in the small years from 1902 to the present time have, with very few exceptions, continued to show a marked decline due to excessive fishing.

The catches in the big year of each cycle reached their height in 1913. The record of the pack shows that in the big years 1901, 1905, 1909 and 1913 the Fraser River system produced an average pack of sockeye of 1,927,600 cases. The reports from the spawning grounds show that, notwithstanding the great catches in those years, all the spawning beds of

the Fraser River were crowded with spawning sockeye. Trained observers state that the number that reached the beds in those years was as great if not greater than those taken on the fishing grounds.

The pack in 1917, the last year in the cycle of big years, produced a pack of but 559,732 cases or 70 per cent less than the average of the four preceding big years, and was 76 per cent less than the catch of 1913 the brood year. The startling decrease in 1917 is due to the fact that the great spawning run of 1913 did not reach the spawning beds of the upper section of the Fraser River, because that river's channel at Hell's Gate was blocked by a great slide of rock which formed an obstruction that the greater proportion of the run of that year could not get over, and they died there without having spawned. The total number of sockeye that escaped capture on the fishing grounds, and which reached Hell's Gate in 1913, is stated by qualified observers to have been as great as in 1909. But, owing to the blockade, the number of sockeye that reached the spawning beds of the upper section of the Fraser basin that year did not greatly exceed the numbers that reached them in former small years, and did not exceed 20 per cent of those that reached the beds in 1909. Reference to one record from the spawning beds will sufficiently illustrate this conclusion. In 1909 four million sockeye entered Quesnel Lake, one of the great lakes of the upper section. In 1913 but 557,000 sockeye reached that lake, and the run to all lakes in the upper section of the river was proportionately less than in 1909. While the catch of 1917 produced a pack 76 per cent less than in 1913, the number of fish that escaped capture was proportionately far less. In place of the four million sockeye that entered Quesnel Lake in 1909, and the 557,000 in 1913, less than 28,000 sockeye were shown to have entered that lake in 1917, and the run to all other section of the upper section showed a proportionate reduction. According to all reports from the spawning beds of the Fraser in 1917 there was sufficient spawn deposited to produce a run in 1921 greater than the runs of former small years; hence it is unreasonable to believe that the catch of 1921 will be nearly as great as it was in 1917.

The records from both the spawning beds and the fishing grounds show that the runs in the small years were destroyed by excessive fishing, and that the greater portion of the runs in the big years was destroyed by the blockade of 1913 and that it was further reduced by the catch of 1917, and therefore cannot hereafter be expected to equal the runs of the earlier small years.

The great sockeye salmon fishery of the Fraser River system has not been destroyed without efforts having been made by Canada to prevent it. Canada throughout has stood for conservation. She has put forth earnest and conscientious efforts to conserve the supply and to prevent depletion. Her record is clear and unmistakable. She failed because she did not have jurisdiction over the entire system. She alone could not provide adequate protection, but she did all that was possible under the circumstances. As already shown commercial fishing for sockeye salmon began in Canadian waters in 1876, under the general fishery regulations of the Dominion. In 1878 Canada passed an Order-in-Council providing that "Drifting with salmon nets shall be confined to tidal waters." and "that drift-nets for salmon shall not

obstruct more than one-third of the width of any stream," and further that "fishing for salmon shall be discontinued from 8 a.m. Saturdays to midnight Sundays." All fishing in her waters has been under license and none but bone fide resident fishermen have been permitted to fish.

In 1889 the Dominion fishery regulations for British Columbia were amended to provide that "the Minister of Marine and Fisheries shall from time to time determine the number of boats, seines or nets or other fishing apparatus to be used in any waters of British Columbia," and all the provisions of the regulations of 1878 were continued. In 1894 the order was further amended to include the provision that "the meshes of nets for catching salmon other than spring salmon, in tidal waters shall not be less than $5\frac{3}{4}$ inches extension measure and shall be used only between the first day of July and the twenty-fifth day of August and between the twenty-fifth day of September and the thirty-first day of October." Canada has maintained closed seasons in her waters ever since. In recent years the weekly closed time has been extended and the fishing limits further restricted.

During the period that sockeye fishing was confined to Canadian waters alone, it is a matter of record that the catch did not in any one year produce a pack in excess of 300,000 cases, representing a catch of less than four million sockeye, and that during that period Canada hatched and planted in the Fraser twenty-five millions of sockeye fry.

Canada began the propagation of sockeye in the Fraser in 1885 with the establishment of a hatchery at Bon Accord. Between 1900 and 1907 Canada built five hatcheries on the Fraser having a capacity of one hundred and ten million sockeye eggs, and she has since built two auxiliary stations. The hatcheries built in 1901 at Shuswap and in 1903 at Seton Lake, have been closed since 1914, because a sufficient number of eggs to warrant operations could not be collected from the tributaries of those lakes. With the exception of the years of the big run the hatcheries on the Fraser River have never been filled beyond thirty per cent of their capacity since 1905, because eggs to fill them were unobtainable.

Canada organized a patrol force the Fraser in 1878 and her waters have been effectively policed every year since.

Canada inaugurated a method for the inspection of the spawning area of the Fraser River basin in 1901, and has annually conducted such investigations every year since. Dr. C. H. Gilbert, of Stanford University, in one of his many valuable papers on the salmon fisheries of the Fraser says of this work—"No other sockeye stream has received such close and discriminating study. Annual inspection has been made of the spawning beds of the entire watershed, and predictions of the runs for years hence have been fearlessly made. It is a matter of record how consistently these prophecies have been fulfilled."

The reports that spawning beds since 1901 have been the basis of Canada's contentions. Following the disclosures made in the reports from the spawning beds in 1902, 1903 and 1904, that there had been a great reduction in the numbers of sockeye that

reached the beds in those years, and with the knowledge that the catches in those years were also far less than in the preceeding four years, Canada laid the facts before the Governor of the State of Washington, and obtained the appointment of a joint commission to investigate conditions affecting the salmon fishery of the Fraser River system. That commission, consisting of five representatives from the State of Washington and five from Canada, reported that the runs of sockeye to the system in the small years had been seriously depleted by excessive fishing and were in danger of being destroyed, and recommended that all fishing for sockeye in both State and Provincial waters be suspended during the years of 1906 and 1908. It was believed by the Commissioners that by prohibiting fishing in those years, the runs four years later would be restored to their former proportions. Canada accepted the finding of that commission and at once passed an Order-in-Council prohibiting sockeye fishing in 1906 and 1908, provided the State of Washington passed a similar Act prohibiting fishing in her waters. A bill to that effect was rejected by the Washington Legislative in 1906. Consequently Canada recalled her order, and fishing was conducted in both those years with renewed vigor and with disastrous effect. The catches were smaller and the spawning beds less seeded.

Following the failure of the State of Washington to adopt the measure Canada turned for help to the Federal Government at Washington, D.C., and secured the appointment in 1907 of an international commission to enquire into conditions in the Fraser River system. After a year of investigation that commission unanimously recommended, as necessary to prevent further depletion, the adoption of joint and uniform regulations restricting fishing. A treaty embodying its recommendations was drawn and signed in Washington in 1908, by Great Britain for Canada, and by the President of the United States. Senate rejected it. Therefore fishing was continued as before and, although the amount of gear was greatly increased, the catches in the small years continued to decrease, and the reports from the spawning beds grew even more alarming.

The progressive decline in the catch in the small years, and the disastrous effect of the blockade in the Fraser channel at Hell's Gate in 1913, caused Canada to again renew her overtures to the United States Government for the adoption of remedial measures. In 1917 Canada and the United States created a joint International Fishery Commission to deal with the subject. Following an extended investigation that Commission, like the commission of 1906 and 1908, unanimously found that the situation was critical, and recommend joint action on the part of Canada and the United States. Subsequently a treaty was signed in Washington, D.C., in 1919. Canada at once approved the treaty. That treaty now awaits the action of the Senate of the United States.

Canada stands today, as she has stood since the beginning, ready to adopt any measures which promise to restore the runs of sockeye to the Fraser River system. She can accomplish nothing without the co-operation of the United States. Neither Canada nor the United States acting singly can provide measures that will ensure restoration in fishing.

Deplorable as the conditions on the Fraser system are, the runs of sockeye can be restored by concurrent action on the part of Canada and the United States. It has been shown that in the big years 1901, 1905, 1909 and 1913 the Fraser River system produced an average of 1,927,602 cases of sockeye, and at the same time afforded an ample supply to seed all of the spawning beds. The average catch of the four big years named may again be taken whenever the beds are again as abundantly seeded as they were in the brood years that produced those big runs. The spawning area of the Fraser basin has not been lessened or damaged in any way. Its spawning beds are as extensive and as suitable for salmon propagation as they ever were. Its lake waters are as abundantly filled as ever with the natural food for the development of young sockeye, and the channels of the Fraser are open and free to the passage of fish. All that is required to reproduce the great runs of former years is to seed the spawning beds as abundantly as they were formerly seeded. The runs of sockeye of the Fraser cannot be restored in any other way.

The spawning area of the Fraser requires no expenditure of money to bring it into bearing. If permitted to reach the beds in sufficient numbers the fish will seed them, their young will feed themselves, furnish their own transportation to and from their feeding grounds in the open sea. If permitted to do so the fish will do all the work necessary to produce a catch worth thirty million dollars a year. All that is necessary is for the Governments of Canada and the United States to adopt measures which will afford a free passage through their waters to a sufficient number of sockeye to seed the spawning beds. There is no mistaking Canada's position in this matter. She is willing and anxious to do anything necessary to restore the greatest salmon fishery the world has known.

The CHAIRMAN: Mr. Babcock's paper is now open for consideration and discussion, gentlemen. We have a lengthy programme before us. Has anyone any questions to ask, or is there any discussion? If not, I will ask for volunteers to move and second a vote of thanks to Mr. Babcock for his contribution.

Mr. A. S. Arkley: Moves a vote of thanks to Mr. Babcock for his able paper as read.

LT.-COL. CUNNINGHAM: I have pleasure in seconding the resolution which has been moved. It is a paper which I think will not allow of much discussion. There is nothing to discuss. The facts have been very plainly, clearly and concisely set forth. Those who have followed the sockeye run to the Fraser River know that the statement of Mr. Babcock's is absolutely correct. The sockeye run to the Fraser River has been, unfortunately, greatly depleted, and it will take very drastic action to bring it back again. It can be brought back but it will require the co-operation of the Government of the State of Washington, Cannerymen, fishermen and everyone interested in the fishing of sockeye in the Fraser River. I have very much pleasure in seconding the motion of thanks. (Applause).

DELEGATE: As there are a number of representatives here from the United States, we would suggest to them that they make strong recommendations to Washington to co-operate with us in order to effect some cure of this alarming situation.

R. E. CLANTON, Master Fish Warden, State of Oregon. Shows moving reel of fish culture.

The CHAIRMAN: The subject of Mr. Clanton's paper is "Fish Culture with special reference to the feeding and holding of sockeyes," a subject of great interest to many people present. Mr. Clanton is Master Fish Warden for the State of Oregon. I will ask Mr. Clanton to come forward and deliver his paper.

Fish Culture, with Special Reference to the Feeding and Holding of Sockeyes

By R. E. CLANTON, Master Fish Warden, State of Oregon.

I want to apologize to this Convention, Mr. President and gentlemen, first, for the reason that I have not prepared a paper. I will explain the reason, however. Immediately upon receiving the communication from your Secretary, I was called on an inspection trip to the eastern part of our state, and did not return until a few hours prior to starting on this trip to attend your convention. However, I have a few notes and will endeavour to speak from them for a few minutes, and trust I may be able to say something which will be of interest to you.

Prior to 1910 the hatching system of Oregon was carried on under what we now term as the old system; the young fry being hatched out and many of them turned out with the yolk-sacs attached. Some, however, were held in the troughs. The records show that very often there have been upwards of sixty million young salmon turned out annually. I am

speaking of the chinook salmon, but notwithstanding the great number of high graded salmon, the pack is going down from year to year. The men in the fishing industry at that time were disgusted with operations, and it was freely stated that the salmon industry of the Columbia was a thing of the past—that their investment had become of no value. I came to the position of Warden not knowing much about the subject, and I consulted with some of the leading packers with Mr. Warren and others, who were recognized as some of our leading fish packers; and Mr. Warren told me at the time—he said: "It is necessary for a change in the system. We have been discussing this matter and we have concluded that we are getting no benefits from our hatcheries, and this is an opportune time, you being sent in charge of the office, to inaugurate a new system." His advice was, as well as that of others interested, to feed the spawn.

We soon found, however, that our funds were exhausted, and it would not be possible to proceed without some assistance. The cannerymen had a meeting and decided that they would raise a certain amount of funds in order to establish a feed-pond system. This was done in the fall of 1910. With the money thus provided we built what we at that time thought was a very good pond—or channels it might be called. They were constructed out of wood, and tarred with asphalt. They held the water fairly well; but after the ponds were completed, it became apparent that we couldn't hold enough, in fact only a small percentage of what we had in the hatchery. But walking in the lower bank I noticed there was a stream from the main supply, and it dawned on me that I might be able to utilize that for the purpose of making ponds. This work was taken up, and ponds built; and that was the starting of our pond system in Oregon. We did not approve of concrete or wooden ponds. Our experience has taught us that better results could be had by keeping as close to nature as possible. From that time we proceeded to instal our ponds in all of our hatcheries. We decided not to hatch more fish than the capacity of our retaining ponds. If more fish came up than we could handle and feed they were liberated. That system has been improved upon very greatly since it was first started. I must confess that many mistakes were made in the beginning; but from year to year profited by the mistakes which had been made, and until today I think we can safely say that our retaining pond system is a success.

Now as stated a while ago, the natural pond has been proven to be the most successful. In the feed pond system there are several features that must be taken into consideration. First, we must have plenty of water—adequate water supply. The ponds must be so constructed so that they can be cleaned, and kept in a sanitary condition. Sanitary conditions must obtain at all times. Now you will observe from the picture the operation of our feeding system. These ponds were one of our best systems; since, we have installed others greater in extent than those. But inasmuch as you have seen the operation of these, I will leave it to you. We have succeeded in feeding Chinook salmon to the extent of five millions for ten months in this system of ponds. As I stated, that is only one of our pond systems. We have in the Columbia River district for the past five or six years retained and fed approximately fifteen million chinook salmon. The average age of the salmon before liberation in the last five years have been seven months. No fish are turned out intentionally; however, sometimes fish will escape through into the streams through the carelessness of employees; but our intention is to retain all the fish; they must be fed until they are four months, and from that up to a year, as the capacity of the ponds will permit.

Now, in the beginning we thought all that was necessary was to install our ponds and have plenty of water and turn the fish in and throw feed in, but we found from experience that the most difficult part of the problem was the feeding; to properly feed them. In our first experience we would have trouble with the fish. One pond after another would show indications of going bad, as we termed it. There was considerable worry, of course, but we didn't know what the trouble was; and we perhaps would put more

water through the ponds, and feed more, and feed less, as the case might be. But, from experimentation, we found that it was necessary to feed them properly—that a certain amount of care, like a baby perhaps, or a small animal, must be given attention during the time it is very small. So from experience we learned to feed our fish the proper amount daily; and sometimes, when they were very small, fed them several times a day as they might require. We also found later on that it was necessary in most cases to rotate the food; in other words, to change the rations. A little later on I will explain to you what food we fed. We found by feeding one kind of food day after day, that the fish did not do well; in other words, it had a disastrous effect in many instances. But, as I stated, we later on learned that the fish should be fed a certain amount; and I think we can safely say now that we have solved that problem.

In our department it requires about 200 tons annually of feed to feed the fish in our state. In the beginning this was a large problem, inasmuch as it was thought it would not be possible to secure sufficient food with the funds available. But we found that we could get, first, smelts, which run in great abundance in the tributaries of the Columbia, at small cost. These smelt were put in cold storage, and held until they were needed at the hatcheries. We found by feeding with these smelts continually we did not get the best results, although in some instances some of our ponds were giving us no trouble. Later on we found at this time we were throwing out and burying our salmon that was taken at the spawning time. In experimentation we found that this salmon could be converted into food. In places where we could dry them, they were dried and smoked. We would employ Indians to do this until we had some men of our own who could handle that. If they were desired for food, they were soaked in water. On the coast we found it was impossible to dry them on account of climatic conditions; so we proceeded to dry them in tanks. We got good results from the salt salmon fed in rotation with other food. The supply of salt salmon, with big fish, we have made it a practice to mix in mush or some wet product. We found it was impossible to get fish in one place, so one of our men decided to experiment with milk food. There was a cheese factory close to the hatchery at this point, and he found by experiment, that it was a great success. That is one food we did not need to rotate. At this one hatchery we have fed this food for nine or ten years, and the fish do as well as at any other station.

Later on, I discovered that we could utilize the spent salmon, we began to experiment with the Sandmaids. Those proved to be the best food of all. The fishermen would gather them for us and supply them in bags, and in many cases ship them to us. The Sandmaid, as I say, proved to be a good food, rotating with other food, or with smelts, as it was found necessary. Within the last year, to be exact, I have succeeded in making a contract with one of our big packing plants to get delivery of dogs and smelts. This I am getting for \$50 a ton, and we consider it a very cheap food to rotate with the other foods I have mentioned. Now, I will again state that the amount of food fed is approximately 200 tons a year. This food is prepared by grinders, the power furnished in many instances by water wheels built by the men at the station at a very small cost. This 200 tons of food must necessarily be

thrown out with a spoon. Perhaps it would appear to you to be a big undertaking, but, nevertheless, the fish are fed in this way, and the entire amount is fed to the fish with spoons. Now I have covered the retaining of fish. Perhaps I have omitted something, and as has been said, that I am particularly speaking about sockeye. I will say that our experience with sockeye has been somewhat varied. In 1909 my predecessor in office made arrangements with the bureau of fisheries to take eggs from the Ketchikan hatchery and hatch them and care for them with the hope of getting sockeye or bluebacks, hoping to get the run back in the Columbia River, which had been practically depleted at that time. About a million and a half of eggs, I think, were taken to the Booneville hatchery at Booneville. Those fish were there when I took possession of the plant. A portion of them were kept and fed that Fall until possibly Christmas. I cannot remember at this time how they were liberated. As I recall, the understanding with the Bureau of Fisheries was that the experiment should be carried on for a period of four years. The fish that resulted from the 1909 was turned out in the Fall of 1910. We continued to bring the eggs down, but in the meantime some of our canneries and others interested in the fishing began to frown upon the idea of trying to get the Alaska salmon started in the Columbia River. We continued, however, to put these sockeye eggs and hold them for a period of three, four and five months, and then turn them out, as we needed the room for the chinook salmon. So far as I was concerned, I had no conviction on the matter, but in as much as we had entered into an agreement with the United States Bureau of Fisheries, I thought it was necessary to carry it out, and so I continued this up until 1913, and in 1914 we had reports from the fish that was turned out in 1911, or the four-year fish, the eggs being taken in 1910. The fish interests immediately changed their ideas and insisted upon us going into the matter more thoroughly, and in as much as there wasn't any funds available at that time, they proceeded to raise \$5,000, and continued to bring down the sockeyes, as we had obtained results from the fish that was taken out in 1911. We continued, and increased the hatch to 2,000,000. The eggs coming down in 1914, and under the advice of Dr. Gilbert of Stanford University, who worked with us on all fish questions and gave us his advice when we asked him, we held a portion of this fish in a lake of about one acre in area, and they were held until 1916; that is, a portion was held. We didn't know the amount of fish that we had. We had an excessive snowstorm during the winter prior to this time, and a good many of the fish were allowed to escape. In fact the water ran over our stream for two weeks. We found in the Spring that there were a good number of these fish, averaging in size about five inches. Under the doctor's advice, 50,000 of these sockeye were marked. They were turned out in some abandoned points, tributaries to the river, a drift having formed below. I might add that they were taken out during my absence from the station, and were emptied above this ridge. Dr. Rich of Stanford University found that a number of the fish hadn't been able to get out, so that we had to release most of them. But during this period of time, I think a great number of them had been taken by the fishermen, because Booneville is close to the hatchery and is visited by many people.

So I think it is safe to say that not over 40,000 of these fish escaped into the river. Dr. Rich worked under the supervision of the Bureau of Fisheries and carried on investigations along the river, at the different canneries, throughout the run of the fish, and he estimates that we got back about five per cent of the marked fish. I feel almost sure that there was a bigger return than that which came into the river, because I had at one time said to me that seventy-five fish had been seen in one day. I had offered a reward of 25 cents apiece for the fish, and I had to send out telegrams to the hatcheries and seining grounds to stop it, because they were swamping us. So I think I can safely say we had five per cent returned. The fish were in excellent shape. But they were held in this pond without food for about five weeks before they were turned out into the river to migrate to the ocean. Some were turned out below this pond, but as to the number, I am not able to say. While carrying on this experiment we found we had fairly good results in holding sockeye in this small stream. You must understand our work principally has been with the chinook salmon. We have a number of ponds, but I was advised by our Department to pay more attention to the chinook salmon, which was valued more than the sockeye.

Dr. Rich went up the following Spring and turned out some of the sockeye in the river through arrangements made with people who handled the power plant. He agreed to leave their power gates open for a short time. Last year they showed good results from the liberation of those fish. Previous years there has been no sockeyes in the river. Last year there were possibly 7,000 or 8,000 went back up the river nearly 4,000 miles from the mouth of the Columbia to the place where they had been held, or to the lake. A number of these were taken and placed in a pond in a town, and were kept and shown there on exhibition.

Great interest was shown by the older citizens in these fish. That is virtually our experience up as far as the reports of our work in this connection. But in the Fall of 1918, the eggs were brought down again, and the beginning of last year they were taken to the feed ponds. We determined to give them a trial, and we decided to allow half of the pond room to the sockeyes there and half to the chinooks. These fish were held until the beginning of this year, when they were marked and liberated. A picture was shown of some of the fish taken out. I maintain that with proper equipment, that the sockeye salmon can be held. I think that we have demonstrated that. However, there will necessarily be some loss; not through mortality perhaps, but from escaping through the streams, through the carelessness of employees or by reason of the birds or snakes and otherwise; but I think we can safely say that we can, with proper equipment, raise from sixty to seventy-five per cent of the sockeye and preserve them over the second winter period. That can also be done with the chinook, because we have carried out experiments with them several times. I believe the whole thing is the more careful handling of the young fish through a period of time. I think you will get much better results by getting fish of the larger size. That has been our experience. There is no doubt that the hatchery operations have been a benefit to the Colum-

bia River. In 1913 the pack reached bed rock. Four years from the first of February the pack almost doubled, and it went up until it reached in the neighborhood of 600,000 cases and remained there up until last year; and this year gives promise of being another big year.

Last year Dr. Rich put in the entire summer along the Columbia, and he was dissatisfied with the number of marked fish that we captured, and he began to doubt very much if we were getting the results we thought we were. But this year we have taken out already from one hundred to one hundred and fifty marked fish, being eight year fish. In a little catch I saw myself the other day, there was 506 pounds, and we got two perfectly marked salmon without any question of identification.

Now gentlemen, I think I have about exhausted this subject, and I will now be glad to answer any questions on any matter that I have not covered.

MR. DOYLE: I would like to ask what the food was that you fed to the sockeye.

MR. CLANTON: They were fed salmon eggs and spent salmon. We are now holding 3,000,000 sockeyes, when I left the other day, and which were doing fine. And I might also add that we can succeed in keeping our fish say up till June 15th. We experience no further trouble with the feed, and if abundance of water is allowed the fish do not necessarily have to be cared for so particularly as before that period. They figure if we get by June 15th or July 1st that the trouble is over.

MR. BURKE: What is the sockeye mortality, as compared with the chinook?

MR. CLANTON: We consider they are more easily handled as compared with the chinook.

MR. BURKE: Do you think when using the old troughs prior to attempting to hold the sockeye salmon in the rearing pond, that you secured any results on that basis.

MR. CLANTON: I would say not; for the reason it has been demonstrated that the sockeye is a fish that under natural conditions remains in the lakes over the second winter before they migrate to the ocean. At all events Dr. Gilbert has worked that out, and I believe he is right. It is my own opinion that no good results can be obtained from sockeye.

MR. BURKE: If you hold them over, as from natural conditions.

MR. BABCOCK: You wouldn't attempt to use any other method, because you don't think you would get results?

MR. CLANTON: We know that we have got results by holding them over. We have had no proof that we have got any results from the fish by turning them out very small.

DR. FRASER: The great majority of the chinooks tend to come down as soon as they are hatched. If that is the case—since it is the case with Spring salmon, the fourth year run fish is practically as large as the five year stream run fish.

MR. CLANTON: I don't know whether that is true or not. Just recently we had a fish sent to us turned out by Mr. Sutter. The fifth year they fished they weighed 42 pounds. Now the marked fish that is being taken today are all large fish. I think they will average—I think Mr. Sutter can give the exact figures—but they will average 30 pounds.

DR. FRASER: What did your fifth year run fish average?

MR. CLANTON: I think the doctor would say that he does not retard the growth of the fish by holding them. My experience in the Columbia River in seining and fishing the young fish in the Columbia River, is that the fish taken at the mouth of the river which were supposed to be only spawn fish, were no larger than those which were liberated from the hatcheries.

DR. FRASER: But supposing they are both stamped. What size are your Spring salmon when you put them out?

MR. CLANTON: About five inches; some places six inches.

DR. FRASER: If they remain in the fresh water, naturally, they will be just about the same length. Well then, compare that fish and follow it until it is five years, and it would be just about the same size and the same weight as the Spring salmon that had gone down almost as soon as it was hatched and was almost four years old.

MR. CLANTON: I don't know as to that; but I do know that the natural run of fish do not go down immediately. They go down the following year, when they are a year old. One or two years I didn't hold any fish on the Mackenzie. They were all shipped to Boonville, and we found that the natural spawn fish came down and went over the Falls on the first raise. Showing that they had remained in the stream on their own, for about a year.

DR. FRASER: The lowest percentage I have ever caught was 64 per cent; and in speaking to Mr. Rich two or three years ago, he told me that in the Columbia they run about as high as 90 per cent. I don't know anything about the Columbia except what I have heard from him.

MR. CLANTON: Here is one point: the average fish in the Columbia River today is about twenty-two pounds. That average from my best fishing experience many years ago was about the same. If we get any results at all from our hatcheries we are certainly holding the size at just the same.

DR. FRASER: A year older, and therefore a year wasted.

MR. BURKE: Would you say the year was wasted because the number of fish you got back had not increased, that from the industrial point of view you are better off, unless you show an increase?

MR. CLANTON: In regard to the sockeyes in the Columbia River the four year old fish increases in size and is larger than those found in Horse Bay. We had one specimen that weighed fourteen pounds at four years. We have successfully held the fish in ponds where the water reached as high as sixty-five degrees. Of course, you must necessarily have deeper ponds for the warmer water, and you must have an abundance of water.

MR. HARPELL: Does the ice form on the ponds any time of the year?

MR. CLANTON: Oh, yes, but it doesn't last for a long period. At one time there were thirty days when there was ice and snow over the pond, and yet the fish came through in fine shape.

MR. DOYLE: What is the depth of the ponds?

MR. CLANTON: We have from very shallow ponds up to five or six feet. There is a little point I have forgotten: We are now preparing to build a system

of ponds or lakes where we will have possibly thirty acres under control. Our reason for doing that is that it will lessen the cost of the holding operation, also assist in the cleaning of the ponds; at the same time it will allow more natural food and give them more area to obtain food from. These ponds consist of two ponds under absolute control.

MR. HARPELL: This year when the ice was there, when you couldn't feed them did they show any tendency to deteriorate?

MR. CLANTON: Oh no.

MR. HARPELL: Do you consider that feed ponds are necessary on the Fraser where the fish would be released under natural circumstances in the parent lake?

MR. CLANTON: It depends upon the enemies that will prey upon them. I think in many cases, so far as our State is concerned, that we can get better results by holding the fish. It depends on the nature of the fish in the water that prey upon them.

LT.-COL. CUNNINGHAM: You have absolute control of the feeding and retaining ponds?

MR. CLANTON: Absolute.

LT.-COL. CUNNINGHAM: And you can increase or decrease that water at any time?

MR. CLANTON: Yes.

LT.-COL. CUNNINGHAM: What depth of water would you require for a temperature of sixty-five degrees?

MR. CLANTON: It depends a great deal on the location. In the Coast streams in our hatcheries for some unknown reason to us, we can handle fish in a higher temperature than we can in the water that comes from the snow mountains. But there we have the lower end of the pond, where there was four feet of water as I recall.

LT.-COL. CUNNINGHAM: How long were they fed previous to the establishment of the retaining ponds?

MR. CLANTON: Perhaps they were fed for three or four months.

LT.-COL. CUNNINGHAM: What do you call the feeding stage?

MR. CLANTON: I don't think we liberated any in the Sacramento. I think they were all fed for three or four months. They were all small fish when they were turned out.

LT.-COL. CUNNINGHAM: Did you mark any of those?

MR. CLANTON: No.

LT.-COL. CUNNINGHAM: So that you cannot tell what returns you received from the distribution?

MR. CLANTON: We didn't get any back of any kind, bluebacks or sockeyes. There were no returns of any kind to speak of. The catch of sockeyes and chinooks—before the period of four years after liberation, was very small. I am convinced in my own mind that we got no results from turning the fish out. However, that was under different conditions. They were turned out within about one hundred miles from salt water into a large stream. The Columbia River during the month of June, reaches the average stage. I think perhaps, the small fish were destroyed by getting out along the banks and then when the water receded they were left there stranded.

LT.-COL. CUNNINGHAM: These fish when they were released, were in good condition and in as good condition as if they were hatched naturally?

MR. CLANTON: Yes.

LT.-COL. CUNNINGHAM: Would you attribute the

fact that because they were hatched at the hatchery they didn't come back; would they have as good a chance of coming back?

MR. CLANTON: In my judgment, very few of them got to the ocean.

LT.-COL. CUNNINGHAM: That was due to certain conditions?

MR. CLANTON: Yes.

LT.-COL. CUNNINGHAM: Their chance of getting to the ocean was just as good?

MR. CLANTON: Oh yes. I presume so. They were healthy young fish.

LT.-COL. CUNNINGHAM: So your hatchery was a benefit to the extent that it turned out a good number of young fish in good condition? They left you in good condition. So that it was rather the cause of climatic conditions that they suffered?

MR. CLANTON: I found during one year after the sockeye were turned out—when we turned out the whole of the water we found on investigation in one particular place that there had been several thousand stranded. In fact the men went and took them out. That was only in the place where the fish became stranded. The conditions down there are a little different than with the chinook. They seemed to keep as close to the bank of the stream as possible.

DELEGATE: The same conditions would obtain in the case of the natural fry?

MR. CLANTON: I presume they would. You must understand the blueback or sockeye spawn in the Columbia spawn a good many hundreds of miles from the ocean. These were turned out a good many miles from the ocean.

DELEGATE: They couldn't be Columbias, because they were originally hatched fish. That has been demonstrated as far as I am concerned beyond doubt. It seems to me that your hatchery was in perfect condition.

MR. BABCOCK: The fry that you turned out into the stream had no lake between them and the river where they could remain a year?

MR. CLANTON: No.

MR. BABCOCK: Your pond proposition gave them a lake for a year.

MR. CLANTON: Yes. That is a good point. While I am not prepared or in a position to know but very little about the nature of the sockeye except what I have been told by Dr. Gilbert, and I consider the doctor an authority on these matters, having worked with him for ten years, and I found he has been correct almost in every instance; he thinks it is necessary for the sockeye to go above the lake to be retained, provision made to hold them over so as they would stay under natural conditions; and by turning the fish out at Booneville on a swift river at a small size I think perhaps they were wasted and were swept into the ocean or perhaps stranded on the banks of the stream in a few days.

MR. BABCOCK: In all Dr. Gilbert's investigations on the Fraser River, there is only one place on the Fraser River that he ever found the sea type, the sockeye that went to sea the first year immediately after hatching, and those are the ones taken out by Dr. Robertson at Harrison Rapids. The sockeye that goes to sea the first year there is no evidence that it returns at all. It is evident that it is the holding of the fish under the conditions that are normal and natural and that if the sockeye is given a lake like Royal Lake or Anderson Lake; if the sockeye is

given the chance to stay there for a year, it is going to carry out its natural habit. If it is put in the stream and forced to go to sea without access to a stream where it can remain for a year, it is going to be lost.

MR. BURKE: I am not a scientist. We are interested from the industrial point of view, realizing that fish without this intervening pond, has never yet been shown to produce results from the industrial point of view, and apparently you think that your intermediate lake produced results, therefore there must be something wrong with the basis we have been working on in the past.

MR. CLANTON: Well, Mr. Burke, I am not prepared to say anything about the work that has been carried on there. I don't know.

MR. H. B. BELL-IRVING: Might I ask a question: How many years have you been turning out chinooks from the retaining ponds, and what number per annum, were marked and what number per annum of marked fish were actually caught and turned back to you?

MR. CLANTON: We began feeding in retaining ponds in 1910 or 1911, nine years ago. There was no marking done to speak of, except of the chinook salmon, except 1914 or 1915. The results at that time, I think there were five or six of them that were deeply marked. When you put a man on to do it ordinarily, in order to get through, they will probably miss count. But we had no accurate marking on the Columbia until it was taken over by Dr. Rich five years ago. Now we hope to show this year great returns. We have got a good start. Probably over a hundred have been taken. Probably five per cent of the sockeye came back.

MR. RODD: Do the fry lose their wild nature, or become domesticated to any appreciable extent while they are in the hatchery trough or feeding ponds?

PROFESSOR COBB: Since 1904 I have been connected with the hatcheries. Before that they established about five private hatcheries. They were all working on sockeye salmon which is the red salmon, as the Alaska salmon and the Columbia River is as mentioned by Mr. Clanton. In 1906 the United States Bureau of Fisheries established a hatchery and a year or two later a second one was established in Central Alaska. Now, I remember the hatchery of the Alaska Packers' Association, at Loring turned out or handled 110,000,000 eggs in one season, the biggest handling they ever had, and they had that hatchery now since 1901 or 1902 I think and I don't think anybody on earth can prove that it ever did the slightest bit of good. Now on the same stream is the Yes Bay hatchery, that has been producing anywhere from 60,000,000 to 75,000,000 every year. The same run virtually come up to both of them, and yet nothing has resulted. In fact, I think there are less sockeye today than there ever were. Now, in Bonyoe, we are not sure what happened because an eruption practically killed every spawning stream on the Bonyoe Island, and they were virtually out of existence for one year and possibly two. So that doesn't count. But the great runs are in Alaska or Bering Sea, where we never have had hatcheries; and now we are in the unfortunate situation in most cases where we can't prove anything one way or the other. But I think in the handling of the sockeye that the Oregon Fish & Game Commission is on the right track. (Hear, hear, and applause.) But it does not necessarily follow that they are always on

the right track with everything else. Here is another unfortunate thing: We have five species of salmon, and the steelhead trout. There was a time when some of us thought we knew all about the salmon that was worth knowing. I have been fishing for salmon since 1902 and sometimes I feel I know less than I did then. But so far as the sockeye is concerned I think that we have to hold them and feed them until they are able to fight their own battles. I have met them coming down from the lake, and if you have ever seen an elusive fish, it is one of those little five-inch fish that elude anything you can handle except possibly a trap net, and they can pass right through one of those. But so far as Alaska is concerned, with their tremendous output, we haven't in the Bureau of Fisheries or outside of it been able to lay our fingers on a single thing that would indicate that we were doing anything for the industry so far as this hatching out fish is concerned. As to domesticating them and affecting their wild habits, that is rather ridiculous on the face of it. No wild animal will have changed his nature in that short period of time. It takes ages for it to change its own peculiarities of habit, and you know how these instincts will continue for generations, and all you have to do is to take one of those out and let Mr. Rodd turn out a few of these fish that he has raised for seven or eight months, and I think I would rather back his domesticated fish to escape the net than I would the natural fish.

MR. BABCOCK: Isn't it a fact that all of the males of sockeye that were hatched in Alaska were liberated. Weren't they put in the streams and denied access to lakes where they could remain for a year?

PROF. COBB: Take the Alaska Packers Association's hatchery at Loring. There is a chain of five lakes there. This hatchery is located at the upper part of the third lake. Now they have to pass down that chain to go out. They practically do no spawning in the two lower lakes. The first lake is almost practically a lagoon. Then we have a good-sized lake and then the hatchery is at the head of the next lake; and in some instances they carry the fish up to the fourth lake and deposit them. But they all had an opportunity to pass down there. Now, at Bonyoe the conditions are somewhat different. They only had one lake there and the fish were put in at the head of that lake. At Karluk the hatchery was in salt water, no lake at all. I think the hatchery was only about four miles from the sea. They penned the fish in and kept them there until they became ripe. Then they stripped them, and as soon as they had been hatched out they let them go. I don't think that hatchery ever had any pretence for existence, but the others were all on the lake, near the head of the lake; so that they all had a chance to go into the lake, or go out. The lake is about eight miles long, and the hatchery is at the extreme upper end.

LT.-COL. CUNNINGHAM: Does the extensive fishing in Alaska have anything to do with diminishing the supply of sockeye?

PROFESSOR COBB: The hatcheries in Alaska are all located in the south-east and central Alaska sections, where the sockeye have never been as numerous as in the western Alaska Ocean. The sockeye run are in Bering Sea where there never has been a hatchery. We are unable to prove either for or against. We can only tell you what happened. How it happened, or what other causes had intervened, we don't know, but

we have all been groping for a solution of this problem. The only thing that appears to present any real solution seems to be the adoption of this new plan. I think we are justified in going seriously after this new plan.

LT.-COL. CUNNINGHAM: I rather agree with you; but what I want to get at is, is the artificial incubation of fish at these hatcheries, is that the cause of the depletion of those particular streams?

PROFESSOR COBB: I don't think so. No, by no means.

MR. ROBERTSON: Isn't it a fact that the Afognak was depleted?

PROFESSOR COBB: Yes, for two years. They get salmon over there now.

MR. ROBERTSON: What was the cause of that?

MR. BABCOCK: Alex. Robertson is here, and he has an original project. He puts his sockeye fry when they are able to be taken out of the trough, in a small pond next to the hatchery, and it is cleared by water. These sockeye are able to get out whenever they want. There were no sockeye runs through that stream up to the time that we began to plant the fry in that pond; and the stream that runs into that Harrison Lake. He took out 4,000,000 of eggs last year.

LT.-COL. CUNNINGHAM: These sockeye were not satisfied by staying in the retaining pond where they were raised, but went right up into the hatchery.

MR. ROBERTSON: That is right.

The CHAIRMAN: Now, gentlemen, we have a lot more papers to be heard tonight, and unless there is some important question to be asked Mr. Clanton, I am going to ask Mr. Doyle to move a vote of thanks to Mr. Clanton.

MR. ROBERTSON: What is the height of the fall? In the wild waters of Morris Creek we put a quarter of a million of sockeye in two of those lakes this year. The two lakes are beyond the hatchery. One is about a mile square, and the other about a mile square. We put about half a million sockeye in these, and the reason these lakes are bad is because there are falls.

MR. CLANTON: It is my opinion the fish will go

out over the falls. Speaking from my experience of one river, fish going down must necessarily pass over the fall, a drop of thirty feet. Speaking of my experience of fry going over the falls, if there is plenty of water in the pool for them to drop, I think they will go over. I am satisfied your fish will go over the fall.

MR. ROBERTSON: I can give you our experience in hatching fish and covering the troughs. I put the same number of eggs in the gravel, and made the trough similar to yours and had good results; and I put the same number of eggs in the hatchery trough and those were not removed until prior to Christmas. When Dr. Gilbert came up to visit, we examined the fish that had been kept in the dark and also those that came out of the gravel and there was no apparent difference so far as the doctor could tell. I will say this, however, that I believe it is advisable to keep your fish in the dark, especially in the early stage. I think the light is disastrous in some cases. For that period we tried to select our feeding ponds where they can have the shade. In connection with trout, I have seen trout where, when they struck the light it seemed to irritate them, and they would get under the rocks.

MR. DOYLE: I move a hearty vote of thanks to Mr. Clanton. The discussion has broadened our ideas very much. All of those who have spoken have assisted very much. Whether the system in vogue in Oregon is the best one or not, the fact remains that practically all of us are of opinion that the old method is obsolete and does not bring results. In Oregon they have got five per cent of the marked fish without counting the others. If we could get five per cent back in the Fraser River from the quantity of eggs put there, it would bring the catch back to the point as big as ever before. I have pleasure in moving a vote of thanks for Mr. Clanton's able address. (Applause.)

MR. H. B. BELL-IRVING: Seconded.

The CHAIRMAN: We have four papers carried over from this afternoon. I will call upon Mr. Hinsdale.

The Workman's Compensation Act of British Columbia in its Relation to the Fishing and Canning Industries

FRANK W. HINSDALE

FRANK W. HINSDALE (Secretary, Workman's Compensation Board of British Columbia): Mr. Chairman and gentlemen, I will not detain you very long with this paper, as it is very short; but if at the close you find you want to ask some questions on anything I haven't covered, I will be glad to answer any questions. I have avoided mentioning any term in regard to the Workman's Compensation Act, because I think most of the people here are well acquainted with those terms. The work of auditing the cannery payrolls is very simple. The payrolls are very plain, and present no difficult feature in which assessment should be levied on packing. So far as fishing is concerned, there are a number of items. The type of fishing which under our Act here are held to be under law, is where fishing is done in boats or gear which is owned by the cannery; or fishing which is done on contract with the cannery or, of course, where the fishermen are directly employed by the cannery. The

fishermen, who just simply happened to be men who owned their own boats and who simply fish and sell in the open market, is not regarded as being under the Act. Those men are not employees; and particularly in the Fraser River, there are a great many fishermen working for themselves. That payroll is not included. I presume on account of certain changes which have been made at this time, that the number of fishermen in the northern waters, the number of fishermen under the Act, will decrease, as the number of cannery licences is increased. If it would be of any interest to you to know what the Act provides, what provision is made for widows, or special arrangement is made with regard to aliens or orientals; if you want any information of that kind, I will be pleased to give it to you. I don't include it in the paper because I believe it would be quite unnecessary. (Applause.)

Usually when I have the privilege of addressing an audience on the subject of a workmen's Compensation Act it has been for the purpose of explaining the benefits that such a law would bring and of urging the enactment of just such a law as we have here in British Columbia.

It is with much pleasure, therefore, that in appearing before you, as representatives of the Fishing and Canning industries of this Province, I find that I am before an audience of friends who have already experienced the benefits which the Act has actually brought and I need only refer to some of those benefits and can heartily congratulate you on having operated your industries during the past three years under the protection to yourself and benefits to your workmen of a Workmen's Compensation Act of the very highest type and as I firmly believe the very best law of the kind that has ever been passed.

It is a pleasure to acknowledge and on behalf of the Board to thank you for the hearty co-operation you have given the Board in its work of administering the Act. The work of the auditors has been made easy by the courtesy and excellent treatment you have given them and most of you are making earnest efforts to comply with the rules and regulations as to the safe equipment of your plants and have provided yourselves with first aid supplies, in charge of qualified men.

No Act, however good, can be successfully administered without the friendly co-operation and approval of a majority of those effected by it and through the Board has earnestly endeavored to administer the Act faithfully and economically the success of the Act has been very largely due to the very high regard in which the Act is held by almost all the employers and workmen in the Province.

In British Columbia, as in Ontario and Nova Scotia, the industry of Fishing as well as of the Packing of Fish is stated in the Compensation Act to be within their application. In this Province the combined industries are very substantial and though the main operations do not continue for more than half the year, the payroll in both industries amount to about \$5,000,000, as compared with an annual industrial payroll throughout the Province of about \$120,000,000.

As most of you are aware, all the industries under the Act are classified into a number of separate groups, or self-insuring classes, in each of which the employers are responsible for the cost of only such accidents as occur in the work of the class in which their industry is listed and for their share of the expenses of administering the Act. It will interest you to know that during the last two years, during which the Fishing and Packing industries have constituted a separate class, your entire share of the expense of the Board has only amounted to \$2,212.38 or less than \$100 a month. As the interest on the average daily balance of the class amounted to \$626.15, the whole entire charge of auditing your payrolls and collecting your money to disburse to your injured workmen amounted to only \$66.00 a month for the entire two years. Every other dollar you have paid the Board has either been paid out on account of accidents in your work or is invested to pay pensions to widows and children of men who have lost their lives in your own industries, or is still on hand to the credit of your class. No injured man has been able to sue you for damages. There

has been no delay in paying any man what was due him under the Act, and when accidents have occurred your men have found you in a friendly attitude toward their claims, and ready to help them make out their reports. You have dared to frankly trace out the true reason why an accident happened, in order if possible that such a cause might never occasion another accidents, and without any fear that you would be proving yourself liable to damages by finding the accident to be your own fault. After your injured men have recovered they have been glad to return to your service and all ill-will on account of industrial accidents has been avoided. These are great and valuable benefits both to you and your workmen and they are directly due to the kind of Compensation law under which you are working. I am happy to say that if necessary I could name dozens of men who have lost a leg or an arm or an eye who are again finding much needed employment in the same plant where they were injured and without any illwill on account of their accidents.

And what has been the cost to you of all these and many other benefits to you and to your workmen? I am sure you will be pleased with the answer.

During the first year, in 1917, the employers in the Packing and Fishing industries were assessed only one-half of the basic rate and paid only 40 cents per \$100 of payroll for packing and \$1.50 per \$100 of payroll for fishing. During the second year the rates were the same and during the third year, or last year, it was only necessary to charge one-quarter of the basic rates and the Packers' paid only 20 cents per \$100 of payroll or two-tenths of one per cent. and seventy-five cents per \$100 of payroll for fishing or three-quarters of one per cent.

This year the season is just beginning and no assessment has yet been made but you will be glad to know that your class has a cash balance to its credit in the bank of \$20,000.

You make your own rate and if you conduct your industries carefully and avoid accidents to the very best of your ability you will see the immediate result in having to pay very little in assessments. Let me illustrate the point. In one of the canneries a stairway at the back led up to a loft where boxes were made. The stairway had no hand rail or guard of any kind and was open at one side. The end of one of the floor boards projected over the stairs. One of the workmen with a box under each arm started down the stairway and one of the boxes caught on the projecting floor board, causing him to miss his footing and fall over the unguarded edge of the stairway to the floor. That accident crippled a man for life, cost your fund over \$5,000 hastened the time when you will have to pay another assessment and could probably have been prevented with ten dollars worth of work.

The Board is very earnest in its work of preventing accidents. It has prevented hundreds of them, and the statistical records in which the costs of accidents are classified according to cause clearly proved that enforcement by the Board of their safety rules has already saved the employers of the Province hundreds of thousands of dollars in assessments. The decrease in the number of accidents, due to unguarded gears is very marked, and in some industries, where certain types of accidents were very frequent during the first year, they now very rarely occur.

Owing to the distant location of the canneries it is not possible for them to be frequently visited by safety inspectors; so the Board must largely depend upon the owners themselves, to insist that their plans be made safe to the greatest extent possible. Of course it is hard to make even foremen see the necessity of observing even the simplest safety rules. Within a week we paid a millwright for losing his right arm, on account of a set screw which caught his sleeve in the very mill which it was his own special duty to see that the machinery was safe. He was showing a man where to do some oiling but did not know enough himself to use twenty cents worth of material and the little time needed to install a countersunk screw instead of a projecting set screw.

Insist that the plants be safe. Inspect them strictly yourselves. If you do not do it you may be sure it will cost you more than if you do so—go to it, and the Board will help you all it can.

During the first year, the work of Packing Fish was listed with a number of other industries in Class Six and Fishing was listed in Class Seven which is one of the largest and strongest groups of industries. In any system of grouping for insurance purposes, the larger the exposure the more uniform will be the rate and the less liable to fluctuations on account of exceptional ill fortune.

The combined payroll for Fishing and Packing only amounted to one-eighth of the payroll listed in those Classes and it was thought to be to the interest of the Fishing and Packing interests that they be included in such strong insurance groups. Personally if I were an employer I would like to have my industry included in the largest and strongest group of the list. However, it was the desire of your association and of the B.C. Salmon Cannery Association that these industries constitute a separate class and be responsible for their own losses alone, without the benefits or costs of sharing the liability with any other kind of industry.

The application was very ably presented to the Board by the Secretary of the B.C. Salmon Cannery Association, Mr. Burdis, and his committee and after very careful consideration and full explanation that if a disaster should occur the liability might prove to be considerable, without the support of the other industries listed in Classes Six and Seven whose payroll amounted to over thirty-five millions, the application was granted and the industries were assigned to a separate class Number 15, in which no other kind of industry is included.

There are, of course, advantages in being in a class by yourselves, and we can only hope that a disaster will not occur. You have been fortunate during the last two years, so far as costs were concerned. It was a narrow escape as to the cost in money but sad in the loss of lives. Fourteen men, I think, were lost when the Renfrew went down, but only two of them left dependents, the cost to your fund was not much over eleven thousand dollars. In one other wreck four lives were lost, one watchman fell from a wharf and was drowned and a number of other accidents have occurred which altogether have cost your fund in the past two years about fifty thousand dollars. Notwithstanding all this, the cost to you for the past three years has only been an average of one-third of one per cent for packing and one and a quarter per cent for fishing, and you have \$20,000 in the bank, bearing interest for class until it is needed.

MR. HAGER: May I ask Mr. Hinsdale a question: Is it one or two years that the fishing industry was carried on under Sections 6 and 7?

MR. HINSDALE: It was the first one, the year 1917.

MR. HAGER: We have been in Class 11 the last two years?

MR. HINSDALE: Yes.

MR. HAGER: Was our experience good while we were in Class 6 and 7?

MR. HINSDALE: The experience was quite favorable. It wasn't bad. Of course, in the first beginning of the Act the first duty of the Board has to do is to collect some money to do business with; and there were two assessments put out in the year 1917. It did produce an amount of money which was satisfactory, and losses were not undue. They got along with half rate.

MR. HAGER: We were passed on to Class 15, when that was done was there any surplus that was due our class credited to our class, under the new class 15, and if not, why not?

MR. HINSDALE: There was no surplus credited to the new class. Class 6, which had a great many industries listed in it which were of the lighter forms of manufacture, and canning, and there was an amount collected for the credit of this class, and all of the different parts of that class were regarded as mutually insuring each other; and when the change was made later on it was made on a new basis. The fishing and canning industries were desirous of being in a class by themselves, and they started off as being in the second year without any credit of any balance which was unexpended.

MR. DESBRISAY: Does all fishing come under the Act?

MR. HINSDALE: Fishing that is done on contract is under the Act. Fishing that is done with cannery boats or cannery gear is under the Act. There are a great many points about the fishing industry that I do not understand. I was wondering, however, if that type of fishing is conducted more at the mouth of the Fraser river.

MR. DESBRISAY: Personally, I do not think that the fishermen should be under the Act.

MR. HINSDALE: I do not think there is any question about that, at least, under the British Act. In a very great many cases I will admit that a great amount of fishing is done where fishermen used the cannery boats and cannery gear, and agree to sell to the canneries, and under the Act they are regarded as being under the Act; and where fishermen have contracted to sell to a particular cannery, they also are under the Act; or if the license has been directly for the cannery, or a man has agreed to sell to the cannery, then they are under the Act. If there is a contract to sell to the cannery they are held as being under the Act. But if they are selling on the open market, they are regarded as fishing for themselves, and not under the Act.

MR. HAGER: For the benefit of Mr. DesBrisay: I will tell you how the Board treats us in the deep sea fishing. We have working on our large deep sea vessels a large number of fishermen. We come under the Act on a rate of three per cent of the payroll, plus an estimated amount of money which it will cost to feed them. We feel, and we always have felt, that we never had any business to pay to the Workmen's Compensation Board one dollar, or one penny,

for those men; because we have absolutely no control over those fishermen in any way, shape or form; and in addition to that, the leaders of their organization have no control over the men whatsoever; but the fact that we feed the men puts us under the Act, and we have to pay 1½ per cent every three years for them.

MR. H. B. BELL-IRVING: In moving a vote of thanks to Mr. Hinsdale: it is an actual fact that they take advantage of the Act to a great extent; and here are many of our charitable institutions suffering greatly, because the injured man knows that the Workmen's Compensation Act are looking after them. In other words, they want looking after themselves. While that is aside from the question, I thought I would mention it. I want to move a vote of thanks to Mr. Hinsdale for the paper he has read, which has depicted in a clear way the meaning of the Act, and the point where he states that an accident can happen without any bad feeling being caused between employer and employee is a great one. It does not apply to the people Mr. Hager referred to. It refers more especially to the higher type of labor employee in our plants.

MR. HAGER: I have very great pleasure in second-

ing that vote of thanks to Mr. Hinsdale. Mr. Hinsdale is unquestionably a leader in his work. While my remarks might indicate that I was dissatisfied, there are many things, good features in connection with that Act. Up to the present we have had no serious accidents. The benefits have not yet come home to us. They may some day. I take great pleasure in seconding the vote of thanks.

DELEGATE: I might say in connection with the Workmen's Compensation Act in Nova Scotia, in reference to the deep-sea fishing, that we in Nova Scotia took the matter up, and we found that men who were working on shares, or were part owners were not subject to the Workmen's Compensation Act; and as such we had the privilege of insuring the men in private companies if we saw fit.

The CHAIRMAN: We have a very important paper to be read by Dr. McLean Fraser, on the "Enemies of the North Pacific Fish," and right after that a paper from Dr. Baker, who will give us some pictures also, on the Fishing Industry in Canada.

DR. C. McLEAN FRASER: Mr. Chairman and gentlemen: I am pleased to be with you today, and hope my paper will interest you.

Enemies of the North Pacific Fish

By Dr. C. McLEAN FRASER.

Before the waters of the Pacific were disturbed by human intervention, doubtless there was a natural balance among the creatures of the deep that varied very little from year to year, although even then there must have been a tendency to an increasing preponderance of some species and an approach to extinction in others. Fluctuations there must have been, for there are differences in conditions in the seas as on land, from season to season. Conditions of light, temperature, food, etc., might be very favorable for both the young fish and the adults of a species for a year or for a series of years, and the species might thrive mightily, or the conditions might be abnormally bad and the supply might be much reduced. Every species has natural enemies but in general, by means of special methods of protection, speed of escape, care with the eggs or young or increase in the number of progeny, the danger of too great diminution is off-set. If the enemies are very few, overcrowding on the spawning grounds so that relatively fewer eggs are hatched or on the feeding grounds where the food supply may become insufficient, will help to maintain the equilibrium.

Man appears on the scene and for purposes of commerce institutes methods of attack on certain species, so different in nature, that the equilibrium between loss by attack and gain by multiplication is destroyed. At times he tries to blind his eyes to this destruction by taking some spawn out of its natural environment and hatching out some hothouse specimens that if they have enough natural strength may even mature, but the depletion goes on and as it applies to but few species, the natural equilibrium is destroyed. To some species, therefore, it is evident that man is the arch enemy, yet he has the temerity to condemn other animal species that must prey on other animals for food but in so doing helped to maintain the equilibrium before man interfered.

From our standpoint we consider only those animals that prey on, or in any way tend to destroy, the few species that we now include in the term "food fishes", as enemies of these fish. These we condemn promiscuously without, in the majority of cases, knowing enough of their life histories to be in any position to decide whether they are doing more good or harm towards maintaining the faunal equilibrium. Remembering this it may be safe to mention some of these "enemies".

Beginning with some of the larger species, we must first take up some of the mammals. The largest of these to make much difference is the killer or as it is sometimes called, killer whale, or black fish, since we can scarcely include the true whales, as the whalebone whales restrict their diet to small crustaceans and the sperm whale feeds on squid, devilfish and sharks, none of which is at present recognized as of importance as food. Killers are well named the "wolves of the sea", as they go in schools and will attack anything from a whale to a minnow. They are very destructive and there seems to be little to be said in their favor. Since they have an abundance of lean flesh which should be as tasty and nourishing as whale meat and since they seem to be increasing in numbers, possibly some day we shall have sense enough to try them for food and doubtless we shall find the flesh much more desirable than much of the food we do eat. Other cetaceans, the dolphins and porpoises, doubtless consume many fish but possibly because they keep pretty well out of the way they as yet do not appear on the black list.

To speak of the sea-lion brings us into the realm of controversy. In spite of the declarations of our well-intentioned friends, I have no hesitation in saying that Steller's sea-lion, or as it is commonly called, the grey sea-lion, which we have in these northern waters, is not a vegetarian. Neither is it the epicure that

others would have us believe. It eats food fishes,—salmon, herring, halibut,—but its diet is by no means restricted to these. Evidence, so far as it has been obtained, shows that devilfish and squid may be important articles of diet as these remains are most frequently found in its stomach. Even dogfish are not despised and it is an interesting coincidence that when the sea-lion appears in Barkley sound in the late fall, the dogfish is no longer the nuisance that it is before the sea-lion arrives.

The hair seal is more widely distributed along the coast or more particularly in the inner waters, and at times it does not hesitate to pass some distance up the



DR. C. McLEAN FRASER.

larger rivers. It is thus familiar to every fisherman and as it will eat all kinds of fish, many are the maledictions that are placed on its head.

The bear helps himself to the salmon as they rest in the pools of the rivers and streams as they pass up to spawn but as the number of these animals and the length of that period of attack are necessarily limited, the aggregate effect cannot be very great. Some of the smaller mammals, like the raccoon and the mink, are good fishermen but they are too small to have a very great effect on the fish supply.

Among the birds, the ducks will probably come first, largely on account of the amount of fish they eat or destroy. All species are not equally guilty but it is very doubtful if any species can resist herring spawn when it is present in abundance. Enough ducks appear at times in a five-mile stretch, such as may be seen in March in almost any year in Nanoose bay and eastward, to eat or destroy more prospective

herring in one day than all the herring fishermen on the coast catch in a whole season. The gulls are protected on account of their scavenging propensities but not infrequently they take to the refrigerator rather than the garbage can. At certain seasons in certain areas there is a reason for misgivings as to the wisdom of the policy of protection. The bald eagle is fond of salmon but as he is not averse to picking up a dogfish at times, he cannot wholly be condemned. If all the fisheating birds are to be included, the cormorant or shag, the goose, the loon, the divers, the murre, the guillemots, the kingfishers and in fact practically all of the water birds would have to be placed on the list but in few cases do we know the amount of their depredations as far as food fishes are concerned.

Reptiles and amphibians scarcely come into this category, hence next in order comes the fishes themselves. First place must certainly be allotted to the dogfish both as to numbers and to rapacity. Possibly it is as great a nuisance to the industry as all others combined. It is true that it has been put on the market as a food fish but unless some other cheap method can be devised for removing the excessive urea from the flesh it is not likely to become an important food factor. In the same class with the dogfish are the various species of sharks, less troublesome only because they are less numerous. The Dolly Varden trout is a serious menace in salmon streams. Because it is included among the game fishes it is protected but it destroys a greater number of eggs and fry than the fresh water bullhead or any of these other fish on which the blame is commonly put.

Practically all food fishes as well as many others, are fish eaters at times. The salmon probably prefers crustacean diet but if sufficient crustaceans are not available, herring, sand launces or capelin do not come amiss. The halibut and various species of "cod" are even more inclined to depend on fish food. The herring restricts itself largely to a diet of copepods and young barnacles but even it at times is guilty of eating the young of its own kind.

The lamprey attacks the salmon and the stamp that it often leaves on fin or gill cover gives some indication of what it may do when it attaches itself to some other part of the body.

Of the invertebrates, with the exception of the parasites, external and internal, no species is likely to do the food fishes much harm. None of them, with the exception of the squid and the octopus, is large enough to attack a fish of any size and it is doubtful if either of these get the chance to do so very often. The parasites are numerous enough and varied enough. There are so many varieties of copepods or fish lice attacking the skin, the gills and even the skin in the roof of the mouth, nematodes or round worms that so commonly infest the body cavity, the digestive tract or even at times the muscles, the cestodes or tape-worms in the digestive tract and sporozoa, encysted or otherwise, almost anywhere in the body. It is difficult to see how any method of control can reach any of these except when the infection takes place in hatchery or rearing pond fish. With these may be included the various bacterial diseases and even the fungus that can only attack when the fish is already wounded.

Since there are these enemies what is to be done with them, for the good of the industry and the good

of the fish themselves. These two should be synonymous but at times they are far from being so considered. With most of the species of which use has been made the question is already answered, in some cases possibly too well. Where at present no use is found for them what is to be done? If they are to be controlled how are they to be controlled? With certain individuals control means only one thing, viz., extermination. Is a policy of total destruction a wise one when in no case is it known what effect such destruction would have on the general economy of the sea? It may be necessary to greatly reduce the numbers of a certain species in a certain area, where the species has become a serious menace but it does not follow from this that the species should be killed off everywhere, especially as with not a single

one of these species have we a satisfactory knowledge of its complete life-history. It is well to remember that because a man eats strawberries for several days in succession in June or July it does not necessarily follow that these form his sole diet throughout the year.

The CHAIRMAN: Any questions you would like to ask Dr. Fraser in connection with this paper? I know this is a paper we want to read carefully, and I may tell you it will be published along with others later.

MR. J. A. PAULHUS: I have listened with much interest to the excellent paper that has been read to us by Dr. Fraser, and I am much pleased indeed to move this vote of thanks. (Delegate seconds.)

Adjourned at 12 midnight.

SATURDAY MORNING SESSION

June 5th, 1920, at 10 a.m. Open Session. Mr. HAGER in the Chair.

The Standardization of the Trade Names of Fishes and other Marine Products.

By Dr. A. G. HUNTSMAN, Biological Board of Canada.

Language arose among men in response to a need for communicating ideas, but in too many cases the multiplicity of words has had the opposite effect, namely that of preventing the communication of ideas. Names form a good example of this for new ones are very frequently coined and very easily become popular in a restricted locality or society. Unless such appellations fill a general need, they never achieve more than local currency, but many remain and render more or less unintelligible to others the speech of those that use them. Not only so, but they may convey an entirely wrong meaning.

In these days when the complexity of the world's life within the ken of the ordinary person is greater than ever before and becoming still greater from day to day, any step in the direction of eliminating unnecessary complexity is much to be desired.

The names applied to fishes and other aquatic forms are so numerous and duplications so frequent that much unnecessary confusion and misunderstanding has resulted. For some time past the Canadian Fisheries Association has been engaged with the Biological Board of Canada in an attempt to bring order out of the confusion and to decide upon common names to be permanently adopted for the various kinds of fishes and other forms of our waters that are in commercial use.

In science the standardization of names has long been recognized as a necessary thing. In the past meetings have been held and rules have been formulated so as to bring it about that each kind of animal and plant shall have a definite name (in several parts) by which it shall be known throughout the world to

men of every tongue. The jealousy that each nation has for its own language has prevented these names from being in any living language, and consequently these standardized names are in the dead language, Latin. This means that they are unfamiliar and for the most part useless to the ordinary person. The Roman languages, French, Italian, and Spanish have a considerable advantage in that they are very similar to Latin, a little modification transforming most of the scientific names into French, Italian or Spanish. Only rarely can this be done for English. An uninitiated person would doubtless realize that "pacificus" means Pacific and "canadensis" Canadian, and he might even suspect that "Perca" meant perch, but he could not be expected to understand that "flavescens" means yellow. To make matters still worse a large proportion of the words although expressed in Latin are of Greek origin.

Although the scientist has brought order out of confusion in the names that he himself uses, he has left the common names alone or attempted only to express his individual preference among such names as are in current use. The time is ripe, however, for an attempt to bring as much order as is possible into the names used by the ordinary person. We are at once confronted in this attempt with a number of difficulties. We cannot expect, of course, to get names that may be common to several languages. Even if we restrict ourselves to the English tongue we find it difficult or perhaps impossible to ensure that the selected names shall be the standard ones wherever English is spoken. We must start, therefore, with our own nation.

Definite steps have been taken to ascertain the views of as many persons in this country as possible of those interested in the names of fishes on the desirability of the various names in more or less common use. Before any decision should be reached it was considered necessary to view the question from every possible angle. Not only have the various names in use in this country been considered, but as well those in Great Britain and in the United States. As the latter country has to a great extent the same species that occur in Canada and as their fish are largely sold in common markets with ours, it is very important to have, if possible, entire uniformity in the names used in the two countries. Fortunately we have met with a hearty response in this matter from the United States Bureau of Fisheries which has taken action in the past with regard to the names of a number of fishes, and whose Board of Trade Names is constantly rendering opinions for other Departments of the administration in that country.

The list which we lay before you is to be considered, therefore, as consisting of those names which in the opinion of those best qualified to judge are, taking everything into consideration, the most desirable ones for referring to these North American species in North America.

We may venture to predict that few persons will be able to find that much alteration has been made in the names to which they are accustomed. No very radical changes have been attempted. In not a few cases such difficulties have been encountered that a decision has been deferred for the present. It should be understood that any list such as the present one will require additions from time to time as new kinds come to be of importance and it is expected that this work shall be continued insofar as it may be found to be necessary.

The omission of the various and important kinds of salmon of the Pacific coast will be noticed. The standardization of their names is a matter that bristles with difficulties. Definite trade names for the canned salmon have come into use and have acquired a very considerable value in trade. It would be far from desirable to take any action that would accrue, however, from some recognition in the common names of the species of salmon. For example the species known scientifically as *Oncorhynchus nerka* has the name of Red Salmon applied to it in Alaska, Sockeye in the Fraser river, and Blueback farther south. Although these different parts of the coast may have different races of this salmon which are not equally desirable, nevertheless it would be a distinct advantage to have a definite name for this species, which name might then be qualified by the terms Red, Sockeye, and Blueback for the races in the different districts. We may hope for an early settlement of this important question.

It may be of some interest to show the reasons behind many of the decisions. The herring of the North Atlantic (*Clupea harengus*) and that of the North Pacific (*Clupea pallasii*) are so similar to each other that the same name may well be applied to both these species, and when any distinction is necessary the adjectives "Atlantic" and "Pacific" can readily be used to designate them further. It is quite otherwise, however, with the so-called herring of the Great Lakes, which does not belong to the herring family at all, but is in reality a small whitefish with a superficial resemblance to the true herring of the sea. The name

cisco is therefore adopted as a more suitable term for these small whitefishes.

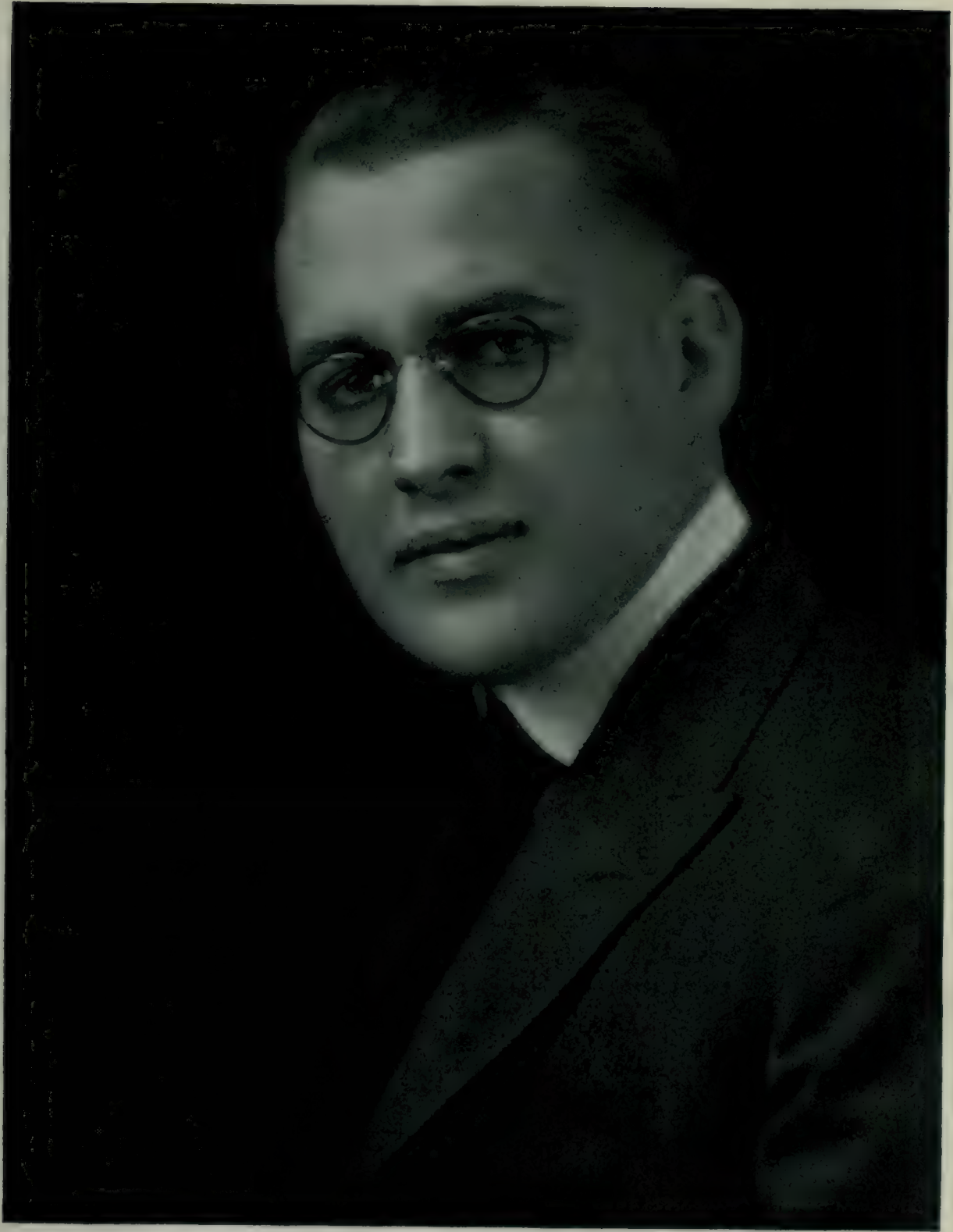
Several of the numerous species of spiny-finned fishes belonging to the genera *Sebastodes*, *Sebastichthys*, and *Sebastolobus* that abound on the Pacific coast have recently proven to be of considerable commercial importance. The name Rock Cod has been applied to them. Now whereas, in Newfoundland cod is fish and fish is cod, in other countries cod means a very definite kind of fish, one which exists in extraordinary abundance on the northern banks of the Atlantic, and a near relative of which is caught in the northern part of the Pacific Ocean. The spiny-finned "Rock Cod" have nothing to do with this true cod of the Atlantic and the name "Rock Cod" is therefore a misnomer and confusing. Snapper has been suggested as a suitable name. But unfortunately quite different species which form a not unimportant part of the catch of fishes in the southern United States have long been called snappers. The name rockfish is, so far as we know, not open to any of these objections and its use for these valuable fishes of our Pacific coast is therefore advocated. The various species may be distinguished by adjectives, and may be known as the Black Rockfish, Red Rockfish, Banded Rockfish, etc.

The success of a movement such as this for the standardization of names depends of course upon the general adoption and use of these decided upon as most suitable. It is expected that these names will be constantly and consistently employed by the Canadian Fisheries Association and by all its members, and that they will be adopted uniformly in their reports and propaganda by the various government organization not only in our country but also in the United States and Newfoundland. In this event there can be no question but that much of the confusion that has existed in the past will in a very short period indeed be nothing but a memory.

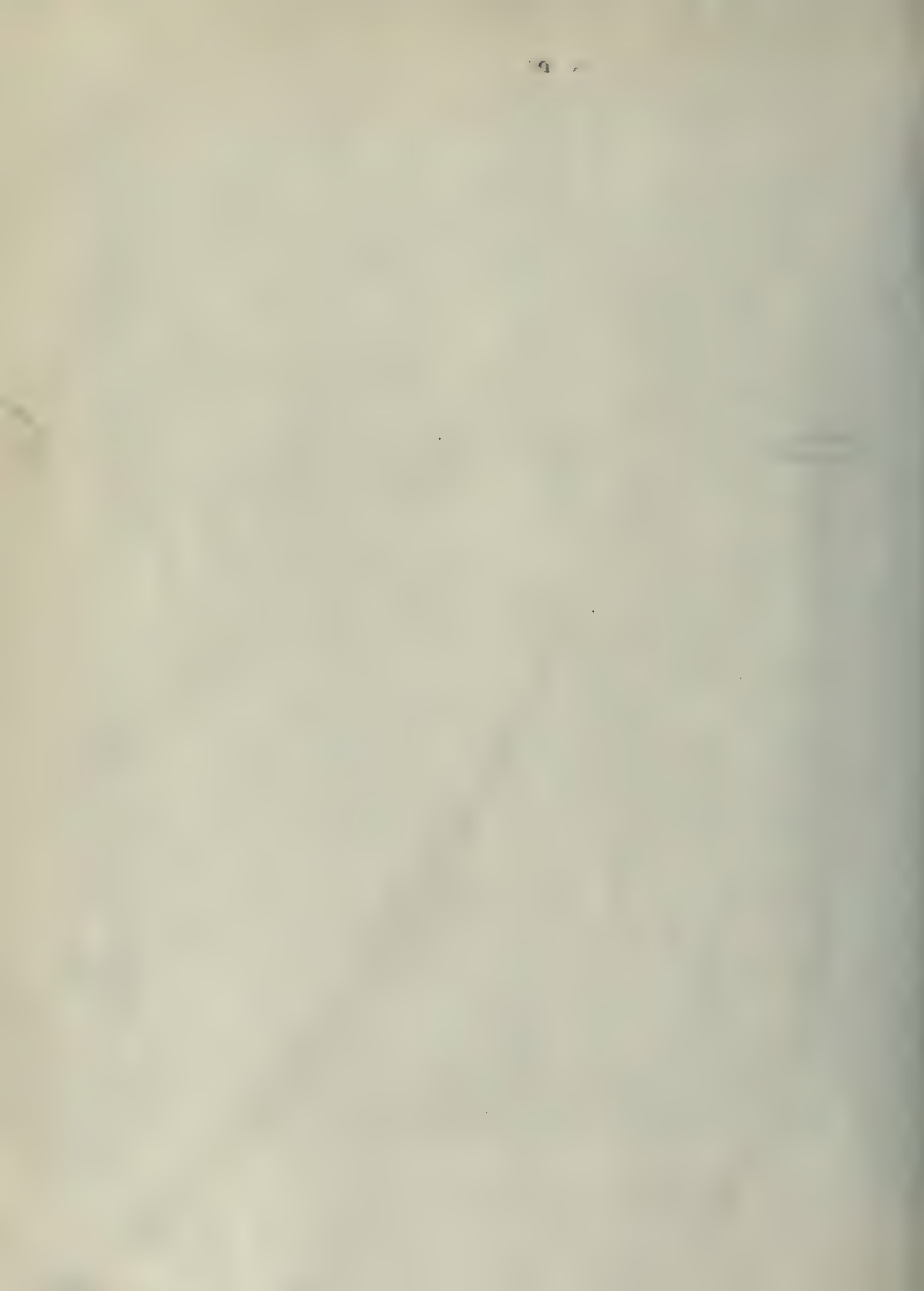
Owing to the confusion that there has been in the names in use for many of our fishes, it will not always be possible for any one to know what kind of fish is meant in the case of each of the many species included in the list. The scientific names are definite and make this matter quite clear to the scientist. This however, does not help others who desire to be correct in the names they use. For this reason it is intended to publish at the earliest possible date a book or pamphlet which shall not only contain these names, but which shall have a photograph of each species in addition to a brief statement of the essential facts concerning it. By referring to this publication any one with knowledge of the fishes should have no difficulty in ascertaining the proper application of each name.

(FOR LIST OF NAMES, SEE PAGE 52 WHERE SAME ARE EMBODIED IN RESOLUTION).

DR. A. G. HUNTSMAN (of the Biological Board of Canada, Toronto): "These names have been considered by the United States Bureau of Fisheries and their representatives, and have been passed as suitable, and I hope that this meeting will give careful consideration to them, in order that we may, if possible, come to some agreement. The reason for the standardizing of trade names is doubtless obvious to you. We have questions of standards on other matters before this convention, and we perhaps realize



*FRED A. GOSSE, Vancouver.
Vice-President and General Manager, Harry Hall & Co., Limited.*



the importance of this in order to eliminate as much confusion as possible. That is certainly the case in regard to names. In England a certain fish is known as the hake. An entirely different fish is known by that name in Canada along these two coasts. The hake of eastern Canada is not the hake of England. What is called the hake in eastern Canada is called the ling. The name ling in the Lakes is given to another kind of fish, of very different kind; and this kind of fish is in New Brunswick taken and used there under the name of cusk; and the cusk, on the other hand, is more ordinarily applied to a certain species of fish found along the Atlantic coast. That instance of the confusion now existing will be an example to you of the confusion that exists in other cases. It has not been possible to agree upon certain trade names in certain cases. A number of these have been left off the list. For example the group of the flat fish which have been coming into prominence during the war and since have not been dealt with. There are quite a number of fish of this kind, flat fish, which exist along the coast of British Columbia of which three chiefly have come into use, and these have been given the names of brill, plaice and sole. These names have been used elsewhere for entirely different fish. Whether they can be accepted as the correct ones for these specific species or not is doubtful. It is hoped that proper names will be found for these in future. We hope that we have included in this list all the more important species of fish from the commercial standpoint. One case must be mentioned, and that is salmon, which you consider the foremost one on this coast. The Biological Board of Canada, after considerable discussion, agreed upon certain names for the different kind of salmon along this coast. The names are as follows: Sockeye, coho, Spring salmon, pink and chum. These were considered as the most suitable names for these specific five species of salmon found in the waters of British Columbia. The United States Bureau of Fisheries has not objected to these names, and has nothing to advance in place of them; but it does not desire to take action. They are not prepared to adopt any definite names for these variety of fish, perhaps owing to the situation on this coast where you have a conflict as to the suitability of names, in Oregon, Washington and Alaska. That would seem to be the situation. The failure of the Bureau of Fisheries to adopt these names for the different species should not hinder us from taking action. It may be that the names we hope to adopt will also be adopted in the United States. I will also therefore wish to recommend that the association not only accept the list which has been distributed among you as a desirable one for these fish, but also these five specific species of salmon, sockeye, coho, spring, pink and chum.

DISCUSSION ON DR. HUNTSMAN'S PAPER.

The CHAIRMAN: Now gentlemen, you have heard the paper of Dr. Huntsman's, and it is now open for discussion. It is quite likely that some of the members present have some ideas to advance.

PROFESSOR COBB: Mr. President, I think the form of Dr. Huntsman's presentation here is a very good one. He has, however, left out one of the most difficult problems, and there are a lot of them. We find that names, while they are useful yet, generally, they are confusing. We are going to have our worst

difficulty with the salmon, simply because prestige has been built around these common names. Taking the salmon first, the blue back we can practically eliminate as a common name, because there are very few of them trapped any more, and it would be a benefit to those people if they were permitted to call them sockeye. Now you come up to the Alaska red and sockeye. The sockeye fetches a higher price in the markets of the world than the Alaska red; although there was a time when you could only sell a sockeye by calling it an Alaska red. One well known British Columbia firm finally put the name of "sockeye" on the map, and the sockeye today fetches the highest price of any canned salmon, much higher as a usual thing than the Alaska red, which is much the same fish. You might wonder why that should be, but there is a reason for that. You very rarely see the world accept a thing and pay the higher price for it unless it is a little different or a little better than the same species from some other place. Undoubtedly, the sockeye on the Fraser River section is better. The trade of the world has decided on common names. When you offer the sockeye and Alaska red to the public, probably four-fifths of the consumers think they are an entirely different species. Now the question is, is it possible at this time to shift these names? I thoroughly agree that it is a nuisance to have four or five names. The chum and the pink, I don't think there is any correction, because practically the same name is used all over the coast. A few men might call the chum "ketas," but the common name is chum. When you come up to sockeye and King salmon, or pink salmon, or chinook, the Royal salmon of the Columbia River, the Government will not permit us to call the king salmon of Alaska the Royal chinook. Now you are dealing right there with the construction of a Pure Food Law. We frequently have trouble selling Alaska King, but we don't have any trouble selling the royal chinook. Sometimes if the Alaska King bears Royal Chinook labels, very few people know the difference. Now we come up against the question of cod. I remember writing to Mr. Babcock at one time and asking him what he meant by a cod, and he held up his hands and said he didn't know. I tried to find out what the Government reports meant by cod. They are unable to tell me exactly. It seems to me to include all varieties—cods that are not cods. We have one cod only, and that is the true cod. We separate the ling cod from them, but when you begin to call the sable fish and black bass cods, why, we are merely making trouble for the staff of the fisheries departments. Some man come from the Atlantic coast and sees something that he thinks acts like something on his coast, and he calls it by that name. The same with reference to the mackerel. Someone has called an entirely different variety of fish by the name of mackerel, because he thought it tasted like one.

DR. McLEAN FRASER: It seems to me we can never do that. In this case, we couldn't go to individual fishermen to accept these names. But, on the other hand, if we go to the manufacturer and he accepts them, and separates them so that, as Mr. Cobb says, a statistician can make use of them, that will be good. In the case of the salmon it is more complicated. But if we can get the manufacturer to accept standard names it makes no difference to the fishermen what they call them.

MR. H. B. BELL-IRVING: It seems to me that those two big important class of fish—the salmon and the flat fish—have been omitted. Might I ask Dr. Huntsman if the American Board definitely refused to come to any definite terms or system of names. For instance, of salmon. Did they refuse to join at all with us in regard to salmon?

DR. HUNTSMAN: Yes, they would not take any action in any way. They would not accept these names that we proposed, and would not suggest others. They were not prepared to go into it. With reference to the flat fish, they are anxious to have standard names for flat fish. It is hoped in the near future that names will be found and which will be accepted by the Biological Board and Bureau of Fisheries.

MR. H. B. BELL-IRVING: As regards the salmon, it would seem a pity that something could not be done; and though there is a difference in the salmon of the same species, according to the locality in which they are caught, I presume the scientific name is the same, and if the scientific name is the same it should be possible to arrive at something definite as to that specie, by adding to it the name of the place where it is caught. For instance, the spring salmon: we call it a spring salmon here, and apparently adopt that name, though actually it was caught well on in the summer. The chinook is the same fish, scientifically as the king salmon of Alaska. It seems to me that some definite name should be arrived at, and the name of the place where it is caught could be added, so that each district could then stick to their own fish. That would seem to me to be possible, and I do not see why they should object.

DR. HUNTSMAN: That view was presented to the United States Bureau of Fisheries, with definite names for each of these kind, so that they would not interfere with the different varieties and the name of the place where caught added to that name, but they were not prepared at the time of the conference to say that they would definitely accept some decision. But I don't think that should prevent us here from taking action in the case of the salmon; and, as I have already stated, I would venture to propose that these names which I have suggested be adopted for the different species of salmon, and with the hope that they would be finally and generally adopted along the coast. We would certainly now think, in the interest of Canadian literature at least, that there ought to be some uniformity in naming these fish, which is something very much to be desired.

DR. McLEAN FRASER: It seems to me that that difficulty could be got over by using the adopted name and then, in brackets, the local name.

MR. H. B. BELL-IRVING: Has the Canadian Government accepted the names of chum, pink, coho, spring, as the official names? Has it been definitely settled? Does it accept the name "blue-back" for any particular class of fish running in the waters of British Columbia. A blue-back caught here is undoubtedly a sockeye, and yet there are many put up under the name of blue-backs as sockeyes, and they are not sockeyes. Have they set a standard for that contentious fish? The name seems to be creeping in.

DR. HUNTSMAN: I am not very well acquainted with the terms in British Columbia, but I understand the name blue-back is for the young of the coho. But no attempt has been made to settle any names other than those that are given. It will be expected that all other names will be disregarded in future, so far as

general use is concerned, by the Government in its report, and by its members in their publications, except so far as you have special trade names. The use of these does not in any way interfere with that.

PROFESSOR COBB: I rather like the names with the exception of one. I don't like the name of spring salmon. It does not mean anything much, it is not a descriptive name for the fish. I think if we were to go right back and call it the spring salmon that he would not be far wrong, because king salmon means something. King would be the most proper name. Of course, there are many of our people who would strongly object to calling it anything other than chinook. But king salmon is used in a greater area on the Pacific coast, and I think would have a much better chance of adoption by Americans than possibly spring salmon.

D. HUNTSMAN: There is a general feeling that there should be a reconsideration of that one species, so I will take that up with the Association. If there is a possibility of adopting the name of "king" instead of "spring," we will be able to ascertain after consultation.

MR. HAGER: Professor Cobb's point is well taken. We quote in some parts of the country, spring salmon, and to other parts, king salmon, and to other parts chinooks; and I think there are three or four other names; but those are three common trade names, Kings, Springs, and Chinooks; and it depends on the market we are trying to serve what we will use in our telegram. Right here in British Columbia, in certain markets that we quote springs, but they would not know what we were talking about if we quoted kings, or chinooks, where they were used to the name of kings. I think Professor Cobb's point is well taken.

H. B. BELL-IRVING: The word "King Salmon" seems to be in the soup for a while.

MR. HAGER: Our resolutions committee are now at work. I think this matter is probably one that should come before the Resolutions Committee and be voted on—this among other resolutions which will come up. If it is satisfactory to all present, we will ask Dr. Huntsman to have a resolution prepared for the meeting this afternoon, and meanwhile I will ask our secretary, Mr. Wallace, to move a vote of thanks to Dr. Huntsman.

MR. WALLACE: Mr. Chairman and gentlemen: This little sheet of paper here represents a great deal of painstaking work by Dr. Huntsman. When this matter was brought up about a year ago the doctor and I started on this thing, and I left it very much in his hands. I know personally that he has had an enormous amount of work and correspondence with the trade both here and in the United States. He has made visits to Montreal and Washington and to other places. It is, therefore, with a great deal of pleasure that I move a vote of thanks to Dr. Huntsman for the work he has undertaken in this connection.

H. B. BELL-IRVING: It gives me much pleasure to second that motion. (Adopted unanimously.)

The CHAIRMAN: We will now ask Colonel Cunningham to deliver his paper on Fish Culture:

LT.-COL. CUNNINGHAM: Mr. Chairman and gentlemen: I want to say that the few remarks that I have to make on the subject of Fish Culture is not from the standpoint of science at all. I am not a scientist; but I will endeavor to give you a few facts in connection with fish culture work, as carried on in our department of the Government.



Fish Culture in Canada

By LIEUT.-COL. F. H. CUNNINGHAM,

Chief Inspector of Fisheries for British Columbia.



Artificially fecundating the ova of fish is not a modern art, as it dates back to 1748. From 1763 to 1800 the discovery was a subject of discussion in England, France and Germany. The first attempts appear to have been undertaken in Great Britain on the estate of the Duke of Buccleugh in 1837. Italy undertook the work in 1791, France in 1820, Bohemia in 1824, Switzerland in 1842, Norway under Government patronage in 1850, Finland in 1852, and the United States in 1853. Belgium, Holland, and Russia followed in 1854, Austria in 1865 and Japan in 1877. These countries even at the dates quoted realized the possibilities of assisting Nature in sustaining the supply of fish life.

It is not the intention as I understand it to delve into past experiments and achievements, but to consider suggestions for present activities coupled with greater assistance in keeping the vast waterways of this Dominion producing a full supply of commercial and game fish.

It is hardly necessary to go into details to demonstrate the successful work of the Government in Eastern waters as the salmon streams of the lower provinces speak for themselves, and the lakes of Ontario bear valuable testimony to successful work. Fishermen of the Great Lakes admit that but for fish culture many of them would be obliged to abandon their calling, and the increased values of the leases for salmon streams in New Brunswick and other provinces are silent witnesses of the improvement in these angling areas.

The artificial work conducted in the Province of British Columbia and its results are of interest to the Dominion as a whole, as it is from the waters of this province that the people of Canada are depending for their supply of canned salmon. To the British Columbian engaged in the industry it means everything; it provides the seed for his harvest and others engaged in the business to the number of approximately 21,000. The question that with the ever-increasing miles of gillnets, purse-seines and traps, what successful Government action is being taken to provide for the supply of the future?

The four most essential necessities to retain and increase the present supply are:

1. Preserve the spawning beds as nearly as possible in a natural condition;
2. Keep streams free from obstructions;
3. Prohibit wasteful and immoderate fishing;
4. Increase the supply beyond its natural limits rapidly enough to meet the necessities of a constant and increasing drain on mature fish heading for their spawning beds.

The first salmon hatchery was built in British Columbia in 1884, followed by additional ones as conditions permitted, until today there are ten salmon hatcheries and two game fish hatcheries in operation. These hatcheries are located as close to the

natural spawning grounds as possible, thus eliminating the dangerous necessity for removing green eggs. The trough and basket system is largely followed and the fry distributed on the absorption of the sac. Retaining ponds are utilized at all hatcheries where water facilities will permit. The fry thus attain more growth before taking up their fight for life in the open waters.

Retaining ponds are no doubt of great value, as they provide for the safety of the fry until they attain a



LT.-COL. F. H. CUNNINGHAM.

size which enables them to better provide for their own safety when liberated. Experiments have proved that it is more difficult to retain the sockeye species up to the period of one year than other salmon varieties.

The greatest success has been attained by the officer in charge of the Kennedy Lake Hatchery, who has now over 1,200 sockeye fingerlings in the large settling tank, which were placed there in May, 1919, and are now thirteen months old, and have attained an average length of from 2½ inches to approximately 5 inches.

Whilst it is not possible to hold all fry such a length of time approximately 150,000 were held until they were three months old, when they had attained a length of from 1-1 8 in. to 1-5 16 in. The tempera-

ture of the water was at the highest during the month of August, when it ranged from 54 deg. to 57 deg.

Food is a serious question, the fry being fed on dried salmon eggs, and subsequently on canned sockeye salmon broken up into minute particles.

A recent inspection of this establishment was most satisfactory, there being a million sockeye fry in one pond all in a healthy and thriving condition. A percentage of these fry are now being distributed, and further experiments will be conducted in the direction of retaining a larger number until they reach the yearling stage.

Until very recently the work has been limited to the incubation of one species of salmon indigenous to this coast, namely the "sockeye" (*Oncorhynchus nerka*), this being the most valuable and the most desirable from the consumer's standpoint owing to the oil they produce and the color they carry; consequently they are also the most valuable from a commercial standpoint.

It was necessary to consider the increasing of other varieties previous to the war of 1914 as there was little demand, but since then markets have opened up to a greater or less extent for all species of salmon, hence greater attention for all varieties is required.

We now come to the question of the results which have been attained from artificial assistance to Nature since the first hatchery was built in 1884. In 1913 the disastrous slide at Hell's Gate on the Fraser River practically cut off a very large proportion of the run of that year to their spawning beds in the upper reaches of the river. The work of removing this slide was continued in 1914, enabling certain of the run to ascend. By the Fall of 1915 conditions had been brought back to practically the natural state that pertained previous to the slide and the fish were able to ascend; yet an inspection of the spawning beds in 1919 reveals very few fish. The lower reaches of the river, however, with its spawning beds in Harrison Lake, Birkenhead River, Pitt Lake and Cultus Lake, show an abundance of fish, and the only reason that can be given for the normal and even an increased supply must be credited to the hatcheries on these waters.

When one considers these mature fish are sought after from the time they enter the Strait of Juan de Fuca, all through Puget Sound with its forests of trapnets and purse-seines, and for fifty miles up the Fraser River, with last season 1,312 gillnets, each net being 150 fathoms long and 60 meshes deep, and which if stretched in a straight line would cover 233½ miles, it is wonderful how any fish find it possible to reach their spawning beds.

In the Coquihalla River, tributary to the Fraser, a consignment of sockeye fry was liberated in 1915, and in 1919 we find these fry returning to the river as mature fish seeking their spawning grounds. This is the result of the work on the Fraser River, and with proper attention to the spawning beds, the streams kept free of obstructions, together with adequate regulations strictly enforced on both sides of the line, there is no apparent reason why this great salmon stream should not be brought back to its former prosperous condition.

The public press of this Province has quite recently printed interviews with gentlemen who have criticized adversely the value of the work done at the hatcheries.

Fair criticism is desirable and invited, but unfounded condemnation is of no value to the industry from any standpoint. During the Royal Fisheries Commission of 1917 it was especially noted that practically no owner of a cannery or his manager had visited the spawning grounds to see whether they had been sufficiently seeded or not.

Nature unaided can do but little to meet the demand for fish. Scientists tell us the mortality is so great that only an infinitesimal percentage reach maturity. Sir Humphrey Davy estimated that not 6 per cent of the salmon eggs deposited naturally come to perfection, and Stoddard holds that only 4 or 5 fish fit for the table were the result of 30,000 ova on the spawning beds. Against this waste in Nature as high as 90 per cent of the eggs taken by artificial methods under favourable conditions have not only been fertilized, but have been hatched and the young fry liberated. The average hatch in Canadian hatcheries runs from 50 to 85 per cent, depending upon the species and the conditions under which the eggs are taken.

In the northern part of the province the hatcheries are located on Owokano Lake at the head of Rivers Inlet, and on Lakelse and Babine Lakes tributary to the Skeena. These waters are producing their normal supply of sockeye salmon, and last year the total pack of this species from Skeena River was the greatest for the past ten years.

It is not desired to create the impression at this Convention that the present system of fish culture is perfect. Those who have been closely connected with it for years realize its imperfections, and have taken every opportunity of experimenting with practical suggestions and improving on the successful experiments conducted by other countries. One mistake now rectified was in taking eggs from a stream and not returning a percentage of fry—notably Morris Creek, which was depleted, but last season gave 4½ millions of eggs as the result of re-stocking four years ago.

Hatchery officials are fully alive to their work, and the efficient and progressive officer, Mr. Alexander Robertson, in charge of the largest hatchery in the province, located at Harrison Lake, has been experimenting for the past three seasons with the hatching of salmon eggs by what may be called the "Gravel Method." This method is copied absolutely from Nature and it may be interesting for those present to know that the system was evolved in the mind of this officer by seeing young dog salmon emerge from the gravel on the shores of Harrison Lake. He immediately proceeded to copy Nature, utilizing gasoline cans for the purpose; first putting fairly large stones in the bottom of the can to provide for circulation of water, then adding water until the stones were covered, placing therein the eggs which filled the crevices between the stones, then adding more gravel and more eggs until it was considered a sufficient number had been placed in the receptacle. The water was then turned on and found its way to the bottom of the can through a cylinder raised about half an inch from the bottom, working its way up through the gravel and overflowing at the top.

It was found that eggs so placed needed no attention whatever with the exception of a close super-

vision of the water supply in order to obviate the possibility of a steady flow of water being suspended for even a short period. The use of cans is being replaced by utilizing the ordinary hatching troughs, of which a model is here produced.

Infertile eggs were found to retain life when so treated for a certain period, and when the young fry were hatched out they remained practically dormant during the period the sac was being absorbed, thus obtaining the full benefit of the nourishment it contained. It was ascertained that the fry fed on the infertile eggs and nothing remained but the bare shell, the inside having been completely cleaned. The fry remain in the gravel until well developed when they emerge and follow the water lead into the receptacle arranged to receive them.

Green eggs can be placed in gravel if such is done before they harden, but if once hardened they must be brought to the eyed stage in the ordinary hatching basket and then transferred to the gravel.

It is contended that the gravel method produces stronger fry and they retain to the fullest extent that wild instinct which may be reduced to a certain extent in fry hatched in trays and fed artificially.

Mr. Robertson has proved beyond question that this system is a practical one, but further experiments and improvements must be made before it would be advisable to entirely replace the present system of basket hatching. Great stress has been placed on the value of the gravel system in that the fry retain to the fullest extent their wild nature, but it is noted that fry from which the light is excluded by coverings over the troughs retain this instinct in a very large degree—in fact the difference appears so trifling that a complete change to the gravel system can hardly be warranted.

The gravel system, however, opens up great possibilities for re-stocking streams in isolated places, to which it is impossible to convey fry.

Further, it is most desirable that Mr. Robertson should be encouraged to continue on an increased scale his gravel system as he is entitled to great credit for his untiring efforts in the direction of increasing the salmon supply of this province by artificial methods.

A close observance of Nature has shown that salmon prefer spawning beds fed by spring water or a seepage which must circulate through the gravel, and which is consequently of a higher temperature than ordinary river water. A temperature of from 40 to 50 degs. is a favourite, and five or six months may be calculated as a period necessary to incubate eggs—that is from the time spawned to the development of free swimming fish.

The question of feed has also been a source of experiment, and mature sockeye after having been spawned have been placed in the retaining ponds where, whilst they eventually died, their flesh remained in fair condition all winter. When the sockeye fry reach the retaining ponds they devour voraciously the dead fish and nothing whatever is left with the exception of the bones. I have seen this repeatedly myself, and Mr. Robertson states he has seen so many young fry feeding on a single fish that it was impossible to see the fish itself.

It is strange that whilst the sockeye do not thrive on artificial food the flesh of the old fish seems to be their natural diet, whilst other species of the salmon family thrive better on artificial food. There

is no question but that many of the sockeye remain in the inland lakes until they are one year old, whilst Springs and Cohoes are found in fresh water for a much longer period. The Qualla and Humpbacks go out to sea as fry.

It will thus be seen that the Fisheries Branch of the Department of Naval Service (I wish I could say "Fisheries Department") is fully alive to the necessity for introducing the latest methods into its fish cultural work, and they fully realize that Nature must be aided to meet the drain on the salmon run of this coast which the intensive fishing demands. There is not a man engaged in the fishing industry, whether he be canneryman, fisherman or fish buyer, but who should be sufficiently interested in the future supply to discountenance all forms of illegal fishing and thus assist in retaining that wonderful heritage which Canadians now enjoy.

I cannot close without referring to the success which has been met with in introducing the whitefish of the Great Lakes of Ontario into the waters of this province. In 1913—100,000 whitefish fry were placed in Hicks Lake, tributary to Harrison Lake. During the month of April last, tests were made as to results, and with a small piece of net a number of whitefish were caught averaging from 18 inches to 21 inches in length, and weighing from 2 to 4¼ pounds. The larger ones showed evidence of having spawned during the Fall of 1919, and all the females contained the nucleus of eggs, whilst the males carried milt in its solid state.

I might state that the interests of the game fish are not being overlooked. The hatchery located at Gerrard on Trout Lake is doing its best for the upper country and the hatchery located on Cowichan Lake is looking after Vancouver Island, and I might point out that the new system of gravel hatching will be equally advantageous in stocking depleted waters with game fish, as it has been found very difficult in the past to transport fry to isolated streams owing to lack of transportation facilities.

DISCUSSION ON COL. CUNNINGHAM'S PAPER.

COL. CUNNINGHAM: Referring to Skeena River, anybody that may feel they are affected by this paragraph, I may say it is not intended to hurt anyone's feelings; but it says what it means. Right here I might say in reference to the next paragraph there was a little item in the *Sun* this morning stating that the Chief Inspector of Fisheries was not entirely convinced of certain points brought out last night. This paragraph, which was written, of course, before this convention took place, would show that there is no official of the Government that knows it all. They are only too glad to take up any new situation, and improve our regulations, and do anything for the betterment of our fisheries. (Hear, hear). Referring to Morris Creek: There is a tangible result that they came back to Morris Creek. With the permission of the Chairman, I am going to ask Mr. Robertson to explain to you fully the conditions and system under which we operate. Referring to the whitefish of Ontario: That is a very interesting statement, and it shows that white fish of Ontario can be introduced here in British Columbia and thrive as well. Now with reference to the hatching, with the permission of the chairman, I am

going to ask Mr. Alex Robertson to explain how this operates. I expect you have all seen more or less of these hatching boxes. It is quite simple. (Mr. Robertson explains operation of hatchery boxes).

The CHAIRMAN: Now gentlemen, before asking for a vote of thanks to Colonel Cunningham, I may say we have two more papers to be read, and I take it that there is no particular discussion, or questions to be asked on Colonel Cunningham's address; but if so, I will ask you to do so as quickly as possible.

MR. DARWIN: I would like to say a word of appreciation of Colonel Cunningham's paper. His conclusions agree exactly with mine on the matter of salmon culture. The methods he is following to the extent of our ability, we are following in the State of Washington, aside from the gravel experiment. I was much interested in that portion of his paper where he said he found the bodies of the spent salmon furnished the major food supply of the fry. That has been the experience of all our hatchery men. We have tried at one of our hatcheries for three years the pro-

position of piling in the bottom of the stream a number of the spent salmon and digging them up along in the spring, after the fry has absorbed the egg; and this last spring I observed the same thing, that the fry is so thick that you can hardly see the salmon at all, except the bone.

The CHAIRMAN: Mr. Darwin, you are perfectly privileged to move a vote of thanks at these open sessions, and with your permission I will accept that as a vote of thanks to Col. Cunningham.

DR. McLEAN FRASER: I have much pleasure in seconding that vote of thanks to Colonel Cunningham. It seems to me that we are at the dawn of a brighter day when such work as that which Mr. Clanton and Mr. Robertson are doing will be appreciated. It cannot help but be productive of the best results. May it be continued.

The CHAIRMAN: Now we are to listen to a paper from our friend Mr. Henry Doyle, Vice-President of the Northern B.C. Fisheries, Ltd., of Vancouver, on the subject of "Geese and the Golden Eggs."



The Geese and the Golden Eggs

By HENRY DOYLE



Patriotic impulses make each race believe its nation superior to all other nations. Civic pride gives the inhabitants of each city, town or village an abiding faith in the supremacy of their place of abode over every other place. Individual interest causes each of us to consider our personal undertakings of more importance than any other undertakings, even though alike in nature and the object to be attained. We see the merchant absorbed in one branch of business endeavour to the exclusion of all other branches; we see farmers who specialize in one sphere of agricultural activity; and we see fishermen who are so interested in one division of their industry that they think it waste of time to consider other divisions.

In a sense this is as it should be, for personal interests and civic pride are but stepping stones in the progress toward national greatness. But it possesses drawbacks as well as advantages. Our comparative blindness to the affairs of others lessens our knowledge and narrows our understanding. We do not fully learn the lessons taught by our predecessors experiences; we do not profit quickly enough by the improvements of existing competitors; nor do we realize what the future holds for us as well as if our scope of vision was broader and our policies more farseeing.

There is less of this in the scientific professions than amongst other classes. No professional man depends upon what he learns from his own practice to keep up with the times. All over the world the latest medical and surgical discoveries are heralded and described; special research institutions like that endowed by Rockefeller are seeking further knowledge for the health improvement of the human race; and the use and value of radium and X ray treatment are known to doctors in every town and hamlet. Law societies give members of the legal profession full reports of cases from all sections of the globe, to enrich their knowledge and aid them in their work. Great en-

gineering feats are explained in detail in magazines covering that profession, and the discoveries in electricity and electrical engineering have been world wide in the spread of their miracle like transformation of almost everything that affects our living conditions.

All this has been brought about by co-operation and by a realization that to look beyond the confines of our own horizon, broadens our intellect and increases our understanding. We see what benefit it has been to scientific pursuits, and we cannot deny the advantages of adopting similar practices. But the question is, have we adopted this broad minded policy in the sphere of industrial life?

With but few exceptions the answer must be; We have not. And of none is this truer than of the fishing industry. The cod fish aristocracy of Nova Scotia knows little and cares less of what the belted knights of New Brunswick oysterdome have accomplished, or can yet accomplish. The salmon kings of the Pacific Coast probably never heard of the whitefish royalty of the Great Lakes country. And not only is this true of allied branches of the industry, but even in identical lines the worker in one area is indifferent to what occurs in other areas.

In the "big" year of 1913 the catch of Fraser salmon represented about 30 per cent of the entire world's pack that season, being over 2,400,000 cases. Rock slides blocked the salmon from access to the spawning areas that summer, with the result that in the next season of that cycle—1917—the take of fish was but 560,000 cases, or about 6 per cent of the world's production. This has been a national calamity, but did it impress itself as such on the fishing industry in general? Speak to a Skeena River canner or fisherman and he will say it is too bad, but at the same time he remembers it has resulted in better prices for the Skeena product, and his sorrow becomes a complaisant one. Speak to a Columbia River or Alaskan operator and he will admit having heard there was a par-

tial failure in 1917, and will ask how it is accounted for and what the prospects are for 1921. Mention it to an eastern fish man and he will likely inform you he never heard of either catastrophe or failure; indeed if he is frank he may add he did not know salmon ran in the Fraser River, or that there was such a river in Canada.

The same is true in all parts of the world, and of all branches of the fishing industry. We have no bureau established in which ideas can be exchanged; no recognized medium by which knowledge of interest can be disseminated. We conduct our affairs in an isolated, self-centred fashion, and, if we had our deserts, should be deprived of our businesses on the grounds of criminal maladministration.

Criminal maladministration is not too strong an expression. If a lawyer violated the ethics of his profession he would be disbarred. If a doctor lost a patient through neglect due to ignorance he could be prosecuted. If an engineer was careless in estimating strains, and a disaster followed, he would face imprisonment. And if, through ignorance, neglect, or folly we destroy the fishery assets of the country which are given us to administer so that future generations as well as ours will benefit by them, we deserve to be treated in like manner to the professional man who is faithless to his trust.

But, it is asked, in what way are we false to this trusts? How can we be accused of neglect? What should we do differently than at present to administer our fishery resources properly? The answer is that we have failed to learn from past experiences what the future must face, and until we conduct our present activities with the maintenance of our fisheries as our paramount object we are not doing justice to ourselves or posterity.

Our greatest fault is we have not observed the handwriting on the wall, nor found it applicable to ourselves personally. A few examples will best illustrate this point.

The seal fisheries of Newfoundland date back to about the year 1800 and the average annual catch in the first half of last century was over 200,000 seals. The banner year was 1844 when a total of 680,000 was taken. Since then steam has replaced sails for the propulsion of vessels and modern appliances have resulted in greater efficiency with less effort, all of which should have produced a larger number of seals than could have been looked for in the olden days. But instead of 680,000, or even 200,000 catches today we find 100,000 considered a satisfactory season's work. In 1915 the take was 47,000 seals, in 1919, 81,293 and 1920 with but 35,000 is the greatest failure on record.

A retrospective view, embracing the sealing industry from its commencement shows that beyond question the industry is threatened with extermination. That if the present drain continues there will be none of this trust left to hand down to posterity. But does the present day operator take this retrospective views? Does he realize he is complaisantly destroying one of the national assets, and is not even making an effort to retard the progress of such destruction? For answer I quote the following from an article which appeared recently in a Newfoundland paper:—

"The seal fishery was a failure this spring. Next spring may pay up for the loss. It has been so in the past. We must take the bad with the good, because, after all, both the codfishery and the seal fishery are

a species of gambling, and the man who is not willing to risk is not worthy of gain. Besides there is the consolation that having so many partial failures in the seal fishery the past **seven or eight years**, the industry is getting almost the benefit of a close season. The **seals must be getting plentiful** and will be there for some big trips in the coming years."

And is the whaler more thoughtful of the future than the sealer has been. Let us consider his operations. A century ago New Bedford, Mass., and other Atlantic ports, sent out a regular fleet of whalers, and fortunes were made from their operations. As whales became scarcer trips involved more distant voyages, and many of these New England vessels found their way into Pacific waters. Today the California Grey whale, the Right whale, the Sperm whale are almost exterminated and the humpback species is rapidly following. In 1911 the pinnacle was reached in whale fishing, over 21,000 of these slow growing animals being destroyed that year. Today the fin back whale—a species formerly considered unworthy of notice—is the principal object of pursuit, and it too bids fair to soon follow in the pathway of the more valuable species. Future generations have a poor chance of utilizing the whale, save as museum specimens.

From these mammals let us now turn to fishes, starting in with the lowly oyster. The old Montreal connoisseur will tell you with tears in his eyes of the days when schooners came up to Montreal loaded to the guards with oysters in bulk, and how on payment of 25 cents one was privileged to test his stomach's capacity for raw oysters. Today in Montreal hotels they sell for 12½ cents each, and are very scarce at that. Similar conditions are reported from every oyster center. From New York to Texas the shortage is commented upon. Chesapeake beds are sadly depleted, while Connecticut, the main home of the Atlantic oyster in recent years has fallen off to such an extent that in a recent article on this subject, read before the New York Oystermen's Association, it was stated:—"For five years there has been no appreciable 'set' and the beds being cleared of adult oysters for the market are being returned to the States. Rhode Island has suffered a loss of sixty per cent of her revenues, and Connecticut has reduced the assessment on oyster grounds.

And have the lobster fishermen better conserved the asset placed in their hands to use, foster, and hand down unimpaired to their successors? Again the answer is a negative one. Lobster today is like the American dollar. It commands a heavy premium. Years ago it was seen that extermination threatened and yet no adequate steps were taken to prevent this result. Regulations were enacted to prohibit berried lobsters from being marketed, yet several years ago when Prof. Knight held an investigation on the lobster industry he found government inspectors who admitted that for sixteen years they had been aware of the unlawful stripping of berries from lobsters, and yet had made no real efforts to enforce the law. What chance has posterity to enjoy this asset? What efforts are lobster fishermen, lobster canners, and government officials making to insure the perpetuation of this species? The answers, if there are any, are closely guarded secrets, the condition of the industry speaks louder than words.

A century ago shad abounded from Nova Scotia to Florida. Has this fishery maintained itself any

better than the others? Are shad fishermen conserving the species so that future generations can secure their share? In New Brunswick a closed season was established some two or three years ago with the idea of preventing extermination, and notice of this was given those interested long before the season opened. A month or so before shad commenced running the operators asked the government to rescind the Order-in-Council to save them the loss of gear investment—which investment they had incurred after they had information of the establishment of a closed season. And the government, deeming the operators loss a greater consideration than the loss of the fishery, complied with their request.

In American waters a like condition prevails. Mr. Frank N. Clark, writing in 1883 said:—"It is a well-known fact that forty or fifty years ago shad were so abundant upon our Atlantic coast that they were caught by the million in many bays and mouths of rivers." In 1836 in the Susquehanna River alone over 15,000,000 shad were taken in that one season alone. Over fifty years ago the east, out of its abundance, sent shad eggs to California and Oregon to introduce this species into Pacific Coast waters. Today California ships carload after carload to eastern centers to supply the demand which eastern shad are no longer plentiful enough to take care of. Florida packers no longer obtain their former quantities as their shad goes to the larger centres to fill the demand which local fisheries once supplied. Connecticut shad is not now a market factor, and the run in Hudson River is but a shadow of its former greatness.

The salmon of the Atlantic is going by the board. Where once it was a drug on the market today it is one of the leading luxuries. Once abundant in the rivers and streams of Maine and Connecticut, and also found in Hudson River, it has been unknown in the Hudson since the 18th century and scarce in the other localities for nearly as long. David Starr Jordan, writing of the Atlantic salmon says:—"Many Connecticut people remember hearing their grandfathers say that when they went to the river to buy shad the fishermen used to stipulate that they should buy a specific number of salmon, also. But at the beginning of this century they began rapidly to diminish. Mitchell stated, in 1814, that in former days the supply to the New York market usually came from the Connecticut, but of late years from the Kenebec, covered with ice. Reverend David Dudley Field, writing in 1819, states that salmon had scarcely been seen in the Connecticut for 15 or 20 years. The circumstances of their extermination in the Connecticut are well known, and the same story, with names and dates changed, serves equally well for other rivers."

And so could we continue on with the history of other fishes; the whitefish of the Great Lakes; the shrimp fisheries of California; the brook trout in streams all over the continent. Extermination has already occurred in many sections; the march toward extermination is clearly discernible in many more; and it is progressing just as surely, although as not yet as fully recognized, in almost every other fishery which the hand of man has undertaken. The Atlantic halibut catch has dwindled from 16 million pounds a year to 2 or 3 million pounds. Pacific halibut still maintains an average of 66-2/3 per cent of its banner years, but the average weight of the individual fish caught was 33 lbs. sixteen years ago., 24 lbs seven years

ago, and today will not be much over 15 pounds. With the fully grown, matured fish thus already exterminated can the industry long survive the drain to which it is today subjected? It does not take a prophet to foretell the end.

And the salmon of the Pacific are answering the same last call. The comparative youthfulness of this fishery, and the enormous total of the annual catch blind us to the destruction which year by year takes place. In Canadian waters the Fraser River fishery is our most convincing example, but ample corroborative evidence is obtainable in all other waters. So alarming has been the decrease in runs to Alaskan streams that the American government has already closed many areas to all fishing, and many others are so restricted that the open fishing period has been decreased to 25 per cent or 50 per cent of what was formerly allowed. On the Columbia and Sacramento Rivers artificial propagation has provided a sufficient number of salmon to offset the commercial drain, but these increases are **only in those river section where the hatchery product are liberated.** In the streams and tributaries which have not been favored with this assistance, extermination has either already occurred, or the finish is already in sight.

In the salmon fisheries of British Columbia and Washington similar conditions prevail. The pack secured in late years aggregate more cases than formerly, and we point to this as evidence of the prosperity of the industry. But this increased pack is secured from the poorer grades which previously were not marketable. That sockeyes have decreased is unquestioned. In 1903 one hundred canneries operating in British Columbia and Washington packed 100,000 cases more sockeye than 120 canneries put up in 1919, and other seasons show corresponding results.

We are the geese that own the golden eggs. Like the old woman of the fable, prosperity lies in our possession, but avarice is driving us to destroy our riches. The history of the world is an open book in which is writ that no species endures unchanged under Nature's laws. Even without the aid of mankind the natural enemies of each race keep down the increase so that the best that can be expected is to maintain an average. When man adds his destruction to the destruction of natural enemies a decrease is inevitable. That such is the case we see in every direction. Our animal life, our forests, our minerals, all show man's ability to lessen, to deplete the supply. We are but ignoring the evidence of our own senses when we point to good seasons and heavy catches as indications that the fishery continues unimpaired. It is a Fool's Paradise belief to think that with closed seasons and proper protection for spawning areas nature alone will maintain the supply.

Man does not depend on nature to re-sow the grain field after he has harvested the crop. Instead he plows and cultivates the land, adds plant foods, and shows that by intelligent effort he can easily surpass the most bountiful crop that nature unassisted has ever produced. With land animals the same results have been obtained. Under Man's protection our domestic cattle have increased enormously, while the buffaloes, which sixty years ago covered our plains, and which had only unaided Nature caring for them, are almost exterminated. Thirty years ago this country pos-

essed thousands of wild pigeons: today they are almost extinct, but the domestic pigeon, which man has produced from the wild rock pigeon, is more plentiful than ever.

And so with every other form of life, animal or vegetable—including the human race itself—when man brings his intelligence to bear in assisting nature, the results are beneficial. Why then ignore this fact? Why let destruction proceed apace until the means of replenishment are further diminished, and restoration, if not impossible, will at least be prohibitive in cost? Let us face the situation as it actually is and see that the preservation of the species be as much our concern as extermination has been up to the present. Then we can expect to secure even greater supplies than we have enjoyed in the past; we can hand on to posterity, unimpaired, the birthright which is theirs; and Nature's golden eggs will continue to produce for countless generations the foods which the world requires, and which an All Wise Providence intended should be preserved for their use.

DISCUSSION ON MR. DOYLE'S PAPER.

The CHAIRMAN: Gentlemen, your Committee in charge almost at the eleventh hour decided we would like to have a paper along the lines that Mr. Doyle has prepared for us, and we asked Mr. Doyle if he would do the necessary. Without very much time at his disposal he kindly consented, with the result that you have just heard. I am going to ask Mr. Burdis, Secretary of the B. C. Cannery Association, to move a vote of thanks for the very able paper we have heard.

Before the vote of thanks is moved, I want to say I was very pleased to hear that Mr. Doyle, in his able paper, did not only take in the wonderful resources of our Pacific Ocean, but also touched upon the fisheries of our Atlantic as well, and our Great Lakes. It shows to us that Mr. Doyle is not only a student of his own fisheries here, but has looked upon this matter in a broad manner. (Hear, hear.)

MR. BURDIS: I cannot tell you the amount of interest it has been to me this week as the guest of the Canadian Fisheries Association to sit by and listen to the wonderful discussions and wonderful programme which I hold in my hand. I consider that 1920, so far as the Canadian Fisheries Association is concerned, should go down to posterity as a red letter convention. In Canada, separated by huge distances as we are, the older fisheries of the east command in the councils of the Dominion, a large amount of influence which they use, intelligently and ably for the benefit of their fisheries. But we felt in this younger part of the industry on the coast that we lacked something on various subjects, that we felt compelled to bring before the Department in Ottawa. We felt that we lacked backing and support. This year we are on the Pacific Coast, and the industry is to be congratulated on the fact that the East has ceased to be East, and the West has ceased to be West, because the East and West have met. We have also with us representatives from the great United States to the south; and it is almost unthinkable that a conference

such as this, discussing seriously and with the highest intention the important speeches that have come before us, shall fail to make its mark on the industry in Canada. (Hear, hear.) This fact of the union of the East and West brings to my mind one subject upon which I had hoped this conference would have taken more time to consider than almost any other, and that is the creation of an advisory board for the Atlantic Coast, the Great Lakes and especially for the Pacific Coast. The Eastern fisheries are not three thousand miles away from Ottawa. The Great Lakes are not half the way; but here on this Western Coast we have felt somewhat out of the pale of civilization in the consideration we receive from Ottawa. We feel that there are many subjects that are discussed on this coast that demand almost immediate consideration at times; and here we have been highly favored by having with us, as representing the Dominion Government, the man we have in charge of the Fisheries Department in this province. Unfortunately, they have to refer certain matters which we deem to be of the greatest importance to the head office, or chiefs of the Department in Ottawa. The Department in Ottawa, employed with the Marine and Fisheries, is too big for any one man to manage, and I think it is a calamity to this country that the Government has not seen fit to separate the Department of Fisheries from the Naval Department. It should have an administrative department of its own. (Hear, hear.) The matter of an Advisory Board for the Pacific Coast has been the subject of correspondence between the Association, of which I have had the honor to be secretary for a considerable time. Mr. Doyle a short time ago went to Ottawa in connection with a delegation representing the opinion of this coast in respect to the absolute necessity of creating a special board to be appointed on this coast. We had all hoped that Mr. Ballantyne might have been present with us, and that a discussion of this important subject might have taken place at that time. But I hope that the question of these advisory boards, or executive boards—boards whose advice if it is tendered shall be received, accepted, and acted upon not merely advisory and putting our recommendations in the pigeon hole, but shall be made effective use of. We hope to have Mr. Ballantyne here shortly, when we will discuss the question with him. But I would like to enlist the support of all our members from the East to support us in this movement. I have much pleasure in moving a vote of thanks to Mr. Doyle. He has been connected with the fishing industry all his life. I do not think there is a man who spares himself less in seeking to promote the interests of the fishing industry. I think we are all particularly indebted to him for the last paper. The fisheries in Canada have not been conducted on a sane basis; and I would also add that they have not been conducted on a sane basis in the country to the south of us. I ask you gentlemen to acknowledge the vote of thanks for the able paper which has been submitted by Mr. Doyle.

MR. GOODRICH: It is with great pleasure that I rise to second this vote of thanks for the most excellent paper we have listened to. It seems to me it is one of the most encouraging things that has been at the convention. That the fishermen and cannerymen are alive to the danger that is threatening their industry, and we are fully cognizant of the responsi-

bilities that rest upon in transacting that industry; or else your king salmon of the Pacific Coast will find themselves in the same position as some of the kings in Europe today—king without a kingdom.

PROFESSOR COBB: We all know Mr. Doyle south of the line as well as north. We have all a very high appreciation of his ability, and of the great work he has done in connection with the fisheries, so with that in view I heartily second the motion.

The CHAIRMAN: The next paper will be on the

subject of the Value of the Fisheries College, by Professor Cobb.

PROFESSOR JOHN N. COBB, Director College of Fisheries, Washington University, Seattle: Mr. Chairman and gentlemen: We have the oldest industry in the world, and we have the youngest college in the world. It is rather difficult to tell you how valuable a college is to the fishing industry, because we are so new at it. About the best thing I can do is to tell you a little of our experience in Seattle.

Value of the Fisheries College

(By JOHN N. COBB, Director, College of Fisheries, University of Washington).

The College of Fisheries of the University of Washington, at Seattle, is now about 13 months old, having been opened for instruction on April 2, 1919. The establishment of the College, the first one on the American continent, had, however, been under consideration since 1914, when Dr. Hugh M. Smith, U.S. Commissioner of Fisheries, while attending the first annual meeting of the Pacific Fisheries Society at Seattle, had a conference on the subject with the University authorities. Some few years earlier Dr. Smith had visited Japan and there become familiar with the government fishery schools of that progressive country and returned an enthusiastic advocate of the establishment of such an institution in this country.

The principal justification for the establishment of the college was the fact that the fisheries of the North American continent are the most important in the world. In the United States, including Alaska, their production amounts to about 2,250,000,000 pounds annually, valued as they leave the fisheries hands, at about \$100,000,000. Canada is the second most important fishing country in the world, with products valued as they left the fishermen's hand, in 1918 at \$31,348,084, while those of Newfoundland amount in value to \$25,547,334. The total value of the world's fisheries is computed at \$558,772,512, and if the values of the fisheries of the United States, Canada and Newfoundland were combined they would represent almost one-third of the total.

In the fisheries of the United States are utilized 8,721 vessels of 238,576 net tons; 190,863 men, women and children are employed; while the capital invested amounts to \$139,071,630. In Canada in 1917, 95,198 persons were employed and the capital invested was \$37,169,328.

An idea of the extent of the United States fisheries on the Pacific may be gathered when it is stated that Washington, Alaska, Oregon, California, and Hawaii produce annually approximately 1,665,000,000 pounds of raw fishery products, valued at about \$25,000,000. This represents the price paid to the fisheries, seven-eighths of the world's pack of canned salmon is put up here, while canned tuna, sardines, clams, crabs, shrimp, mackerel, abalone, etc., are put up in large quantities and shipped all over the world. Immense quantities of frozen, fresh, pickled, salted and smoked fishery products are also prepared and shipped. When so prepared the value of the fishery products of this coast alone is increased to over \$100,000,000, while over 70,000 persons are employed in catching and preparing these products for market.

The province of British Columbia in 1917 produced

products valued when prepared for market, at \$21,518,595; 7,916 persons were employed, while the investment amounted to \$15,807,058. The canning of salmon is a very important industry in the province, and is probably the only fishery, with the exception of that for halibut, wherein the limit of safe development has been reached. Like the rest of the Pacific Coast, British Columbia has immensely valuable fishery resources which have been but sparingly, or not at all, utilized as yet.

To the south of us is Mexico, a country rich in natural resources not the least important of which are found in her coastal waters. These, as well as the fishery resources of the Central American countries, are practically untouched as yet.

Reasons for Selection of Seattle.

As a suitable location for such an institution the city of Seattle had peculiar claims, for here was the only American city within whose corporate limits, or in territory immediately adjacent, were to be found in active operation, numerous canneries, smoke-houses, cold storage plants, fertilizer plants, etc., used in turning the raw fishery products into all forms of manufactured articles both for food and for use in the arts and sciences; fishery operations for fishes, oysters, crabs, whales, etc., were also carried on, sometimes even in Seattle harbor; the great salmon, halibut, cod and herring fleets operating in Alaska waters, land their catches for shipment to all parts of the world; while a number of their hatcheries, owned by the federal and state governments, were operated in the State, some of them within a few miles of the city.

The unique situation of the University itself would alone have justified its claim for the honor of establishing the college. The University campus is located on the shores of Lakes Washington and Union, which bodies of water are connected by canals with each other and with Puget Sound. As a result the largest fishing vessels are enabled to tie up alongside the Lake Union dock of the University, which dock is only about one thousand feet from the College of Fisheries. At Friday Harbor, on Puget Sound, the University owns, and has operated for some years, one of the best situated, so far as marine life is concerned, marine biological laboratories in the world.

Courses of Study.

The selection of the proper courses of study to be followed at the College, was of course, of the utmost importance, and as we had practically no guide in this matter, we were obliged to feel our way somewhat. As experience has developed that changes are

necessary, we have not hesitated to make them. Every effort is made to bring out the practical side without neglecting the scientific and cultural. The curricula is divided into two parts. Fish Culture and Fisheries Technology, each covering a period of four years. There are, however, sufficient elective hours in each course to permit a student to acquire all of one and most of the other.

Fish Culture.

In the Fish Culture course, students are instructed in the artificial and natural methods of hatching and rearing fishes, mollusks, crustaceans, etc. This has been made as practicable as possible, and in order to do this a laboratory has been fitted up with troughs for the handling of salmon and trout eggs, batteries of shad and white-fish jars have been installed, white tidal boxes, and other equipment are available. Several cement ponds for rearing fish have been constructed on the grounds, and will be in operation all of the year. Students will not only have the benefit of the instruction by experts and the use of the equipment but can also acquire an abundance of practical experience along many lines of fish culture at the federal and state hatcheries scattered throughout the State of Washington.

Farming our inland waters.—Scattered throughout the country, and notably on the Pacific Coast, are numerous ponds, lakes, small streams, and marshy spots, which under present conditions are a liability instead of an asset to their owners. To drain them in order to utilize the area for land farming would in many instances be too costly, but to devote them to water farming would be a comparatively simple matter. This is especially true in the case of marshy tracts and small streams. In the case of the former they could be widened and deepened, while with the latter small ponds could be constructed and the water run to them from the stream through a series of ditches, or the stream itself could be dammed in a suitable spot and a good sized pond formed.

Owing to its mild winter climate the Pacific Slope is exceptionally well situated for the carrying on of pond culture throughout the year, instead of merely during the open season as in the East, and as the demand from the consuming markets is large during the winter while prices are very high, it should prove very remunerative, probably much more so, acre for acre, than land farming. Trouts, etc., are always in demand.

It is the aim of the College to teach the latest and best methods of pond culture, as this branch of fish propagation is termed, showing how the ponds are constructed and operated, the species most suitable for certain localities, and how to market the crop to the best advantage. For those who cannot take the regular four years' course it is the intention in the near future to offer during the winter months short courses covering several months' work along these lines, and these will be open to anybody interested in the study who is over the age of 20 years.

Technology.

The technology courses includes the history and methods of the fisheries and subsidiary industries. Students receive training in the construction, operation, and preservation of all forms of fishery apparatus: the best methods of handling the catch; modern methods of business management, and a general knowledge of fishery business and admiralty law. Some of

the vessels of the U. S. Bureau of Fisheries and of the Washington Fish and Game Commission are available for practical training in certain lines, and it is hoped that the U. S. Fisheries steamer "Albatross," which is equipped for beam trawling and deep sea work, and has an excellent scientific library aboard, will be returned to this coast in the near future, and make her headquarters at the College.

A very important part of the Technology course is the teaching of the latest methods of canning, salting, smoking, spicing, and otherwise preparing fishery products for market, and in order to do this a laboratory has been established in a separate building, in which have been installed washing and brining tanks, retorts, steam boxes, oil fryers, dryers, double seamers, smokehouse, salting tanks, etc., a barrel making outfit, codfish cutting blocks, codfish brick machine, and all the other equipment necessary for this purpose. In addition to its use for instruction this laboratory will be especially valuable for carrying on research work as to the best means of utilizing certain new waste, or but little used, products for commercial purposes. A little has already been accomplished along this line although the installation was not complete until in April.

In connection with this work we also have a Fisheries Museum, containing models of the principal forms of apparatus in use on this continent, models of fishing vessels and boats, pictures of varied fishery activities, and samples of the many commercial fishery products marketed by our packers, including canned, salted, and smoked products, and whale meals, fertilizers and oils.

Short Courses.

A very important part of the work of the College is the offering during the winter quarter of practical short courses for the benefit of persons engaged or interested in some phase of the fisheries, and who desire to increase their efficiency, but cannot take the time required for a broader course. A special effort has been made to have these simple, practical and concise, and of such a character that a graduate of the grade schools can carry the work. The work is given by means of lectures, quizzes, laboratory, and field practice. Admission to these courses is without examination, the only requirement being that applicants must be at least 20 years old and must show evidence of being able to carry the work with profit to themselves.

During the winter quarter, ending March 31, 1920, the following subjects were covered in these short courses:

The Fisheries of the Pacific: the history, extent, and methods of the fisheries of the countries bordering on the Pacific Ocean.

Canning of Fishery products.

Curing of Fishery Products; pickling, dry-salting, smoking and spicing.

Scotch and other Methods of Curing Herrings.

Bacteriology of Foods.

Classification, Habits, etc., of Pacific Economic Aquatic animals.

Diseases and parasites of Fishes and other Aquatic Food Animals.

Elements of Navigation, comprising compass and corrections; charts and their uses; location of positions by soundings with the aid of charts; plane sailing and coast navigation; use of the traverse table and dead reckoning; use of the almanac and the se-

tant; latitude from noon sight on sun. No mathematics required beyond a knowledge of arithmetic.

Marine Gas Engineering.

A complete course is given in the use and repair of all types of internal combustion engines.

Emergencies—First Aid to injured. What to do in the case of accidents; how to use bandages, the treatment of shocks, bruises, cuts, burns and poisoning.

Examinations are given in the various subjects at the close of the course and a certificate showing the work satisfactorily covered is issued to each student.

At the Short Course Sessions of 1921 various courses covering the hatching and rearing of aquatic animals will be given in addition to those outlined above. Owing to lack of equipment these were not given at the 1920 Short Course sessions.

Value of College to Industry.

As to the value of the College of Fisheries to the industry I feel I am justified in saying that even in its short existence it has more than repaid the money expended upon it. Research work along certain lines has been inaugurated and in time we hope will develop conclusions of much value to the industry; an opportunity has been created by which those now in the industry can enlarge knowledge and thus enhance their value to their employers; the older and most experienced students form the bulk of the salmon inspection force of the National Cannery Association; to the College has been intrusted the important work of biological survey of the lakes and streams of the State of Washington, a most essential, but usually neglected, precaution, without which we can have but a hazy idea of our game and food-fish resources, whether they are in a flourishing or declining condition, and what should be done to aid them if the latter be the case, and as a most essential, but usually neglected preliminary to an intelligent stocking of our streams. Hundreds of inquiries have been received from the citizens of the United States, Canada, Mexico, Siberia, Japan, and various European countries, asking for information about the various branches of the industry, and so far as possible, we have answered them all.

Practically the only objection I have heard to the work of the College is that expressed by a few of the older cannerymen, i.e. that it would breed competitors to those now engaged in the industry. Even if true, this would be an exceedingly short-sighted and selfish point of view. It is my belief that it will be many years yet before the fisheries of the North American continent reach the peak of their development, without considering the vast undeveloped fishery resources of South America, Africa, Siberia, and China, and in doing this great work we are going to need all the scientifically trained men we can possibly get.

In conclusion, I would state that the University of Washington will welcome the establishment of similar colleges in the Dominion of Canada, and will gladly place at their disposal the results of our experience; but should this good work be delayed for any reason we want you all to feel that you are welcome to send your sons, or come yourself, to our College on exactly the same terms as our own citizens do, or if you have any problem peculiar to the industry that we can aid you to the best of our ability in solving, it will be a pleasure to do so.

Need of Industry for Such an Institution.

The fishing industry has lagged behind many other

less important industries simply because of its failure to keep up with the progress of the world in applying technical educational methods. Many of our fishing methods are archaic; our system of recruiting, transporting, and handling labor is far from ideal; in many sections we have senselessly destroyed our valuable resources because we did not apply scientific methods to their preservation, in which event we might have passed them on practically unimpaired to our children without having materially curtailed our own use of them. Much of our fishery resources are either totally neglected, or else but little utilized, simply because of the lack of trained men to work out the problems of how best to use them.

Events of the last two salmon canning seasons on this coast have demonstrated that what this particular industry needs most at present, and the same is true to a lesser extent elsewhere, is trained chemists and bacteriologists who are acquainted with the fishing industry and its methods, a need which we hope to supply in part at least, while the war lasted almost any food product, no matter how poorly packed, could find a market, but the armistice struck the death knell of such easy days, and now the product prepared must conform to certain standards, and the tendency from now on will be to raise these standards still higher. This policy will end the old rule of thumb methods which have to a large extent prevailed in the past, and some of the more far-sighted employees have sensed this and have already endeavored, or soon will do so, to enlarge their knowledge of the scientific principles governing the preservation of fishery products.

An experiment has been undertaken to test the temperature of a tin of salmon. It will be interesting I am sure to all those connected with the cannery industry to know what the temperature of a tin of salmon is in the middle (hear, hear, applause).

In fish culture we find a generally earnest body of men in charge of our hatcheries, but almost none of these men had any scientific training before entering the service, and all they had afterward was the actual work as it developed in the hatcheries. Under these conditions it is surprising that these men have done as well as they have, and it would require but a slight stretch of the imagination to picture what they might have accomplished had they had an opportunity to obtain proper training for this work. A great part of the value of colleges of fisheries will consist in how well they cover the problem of aiding the fish culturist who is now actually engaged in the industry in obtaining the knowledge he needs to aid him in properly carrying out the sorely needed research work in fish culture, and in training the younger generation so that it will be able to step in and carry on the work when they have gone.

DISCUSSION ON PROF. COBB'S PAPER.

MR. HAGER: Gentlemen, this convention is deeply indebted to Professor Cobb's courtesy in accepting our invitation to come before us and give us this valuable paper. I am going to ask Dr. McLean Fraser to move a vote of thanks, and Mr. Short of Nova Scotia to second it. We have with us today Professor Gill, Director of Technical Education at Ottawa. Professor Gill is on the programme of the Canadian Manufacturers Association, and will deliver a paper next

week. He arranged his time so as to be present to hear Professor Cobb's paper, and not with the idea of giving us an address, but to answer any questions put to him. Professor Gill has been long interested in technical education. He had a splendid record overseas, having been in charge of a battery, and since been in charge of The Khaki University for Soldiers Overseas. Our Association has become interested in the establishment of a Fisheries College in the near future, in Vancouver. We appointed a committee to look into project, and these members were, Mr. Doyle, Mr. Davies, and Dr. Fraser, and possibly before we complete our programme one or more members of our locality committee may have something to say as to what they have done today.

MR. BURKE: Speaking as Chairman of the Local committee to look into the matter of this college of Fisheries, I might say that we have had a couple of meetings on this, and unfortunately I was out of the city at the time. Later we held another, and the committee has been looking around for a location that would be suitable for use in this line. I find that one way that would answer our purpose best is a cannery on the North Arm of the Fraser River known as the Celtic, owned by the B. C. Packers Association, and from conversation we have had with them they have taken kindly to the idea, and have offered every encouragement for the use of this building when it comes to the time of putting in our equipment. It is one of those propositions that are difficult to start right off; and not having funds available, it is one that we depend to a large extent on the generosity of the people in the industry to contribute towards the establishment of. We understand in Washington the people interested in the industry have contributed to a very large extent, and we hope when we put the question up to our own people that we will not have much trouble in obtaining like results. We think possibly we might obtain some assistance from Professor Gill's department in the Government, and we hope to have the matter in such shape that we can go ahead, I feel assured in stating on behalf of our industry here that you will all support me in stating that we appreciate exceedingly Professor Cobb's offer to take us into the fold in the meantime, and I think that some of our people might avail themselves of that kind offer.

PROFESSOR HUTCHINSON: It has been my privilege as a member of the Biological Department of the B. C. University to be present at most of your meetings, and I have listened with a great deal of interest to the proceedings. I have been particularly interested in the address of Professor Cobb's, and I think that we have all received a great deal of benefit from it. Professor Cobb has made the suggestion that there should be a college of fisheries established in British Columbia. I entirely agree with that, and I think that I may—although I am not authorized to say so, I think I do not err in saying that the University of British Columbia is willing to co-operate, and would gladly co-operate with anything that might be done

along that line (applause). I am not saying this officially. It is my personal opinion, but I have some authority behind it, although I do not say it officially. The courses which have been given at the University of Washington have been outlined. The short courses have been mentioned. The short courses, heretofore, such as have been mentioned, have not generally been regarded as being compassed in the university course. But times are changing, and such courses are now regarded as really university courses. During the past few years there have been thousands of short course students at the University of British Columbia who have come into the university on a similar basis to that which was mentioned by Professor Cobb to those coming into the Fisheries School. That is they have come in with a knowledge of English, and an age to which they were not asked to certify. There have been short courses given in agriculture, in forestry, and mining; why not in fisheries? I believe all that is necessary is a demand for the the course in fisheries, the same as the demand came from other branches of the natural resources of this country. Regarding the long course, that, naturally, comes under the four-year course, and I need not speak of that. The University of British Columbia I might prophesy safely will add to its staff next year a scientist who is recognized as one of the leading scientists with regard to fisheries on this coast. I am not permitted to mention the name at the present time, but this scientist is one that is known to you, and one who has given an address to this Association which you have enjoyed. That is a circumstance which it seems to me will place the university in a much better position to give such a course, or to draw such a college to it. There are others at the University on the staff who have been working along scientific lines relating to the fishing industry. One of the bacteriologists at the University has published a number of papers on the subject of sardine canning. And that is a simple example that I mention. I believe that if we should have this College of fisheries, it is up to this Association to do something in that regard. The University of B. C. cannot start a College of Fisheries until it is started by the Provincial Government, and the Provincial Government will not see its way clear to make a move until there is a demand. I am not passing the buck on to you, so to speak, but I am trying to point out that in my opinion the University is willing to co-operate if it is the desire of this organization that it should do so. (applause.)

MR. BURKE: I would like to say that the committee had that idea strongly in mind in choosing its location, and had taken that fact into consideration. When we looked the Celtic Cannery over, we thought of the fact that it was only a short distance from the New British Columbia University, and that we would get considerable aid from the British Columbia University in the shape of instructors.

THE WHY OF TECHNICAL EDUCATION

LT.-COL. L. W. GILL.

COLONEL GILL: Mr. Chairman and gentlemen: The worthy chairman has just indicated to you when he mentioned my name first, that I came here primarily to speak to the Canadian Manufacturers' Association.

Now, while I am here primarily for that purpose, I am at the same time interested in what the Canadian Fisheries Association is doing, chiefly along the lines of education. My work as a member

of the Department of Labor at Ottawa is to deal with the general subject of technical education, or vocational training, as it is called. You all know that last year the Dominion Government appropriated ten millions of dollars for the purpose of being distributed among the various professions which have the matter of education entirely in their hands. Now, according to the Technical Education Act, technical education is defined as any form of technical or industrial training which is desirable and useful in promoting industry in this country. So you see it is a very wide field. Now it not only includes manufactures, but includes everything which may come under the broad term of "industry." Agriculture, Fisheries, Forestry, or anything of that kind whatsoever. Now this Act was placed in the hands of the Minister of Labor for the purpose of administration. The policy of the Department of Labor as so far developed is, to aid every industry in the way of education, except those for which provision has already been made. If provision has already been made, no further provision or assistance should be forthcoming. What are the industries which have been provided for already, or vocations? First, we have the learned profession, which are taken care of by the universities. We have the vocation of teaching, which is taken care of by our Provincial Governments; we have agriculture, which is taken care of by a special grant by the Dominion Government for this purpose. Exempting these, we think that this grant may be extended or used for educational purposes for every line of industry in the country. Now the great problem is, how is this to be done? That is the problem. How is it to be done? How is it to be applied? In a very brief way I will just outline the situation as we have it in regard to education; and this will apply not only to this Province, but will apply to Canada as a whole, and in a large measure it applies to the country to the south. We have a system of elementary schools which provided instruction in elementary subjects, reading, writing and arithmetic. These, when provided, are only the tools in the hand by which a boy or girl can get an education. If we look up the statistics we find that while the provincial governments provide or attempt to provide instruction for every boy and girl up to the age of fourteen years, that all of our children do not take advantage of it. They do not get the instruction in our elementary schools. For various reasons, about ten per cent get little or none. Only thirty per cent as near as we can find from the records of our children complete an elementary education at school. Seventy per cent drop out at all ages, but principally from the ages of 11 to 14 years. Approximately one per cent, or less than one per cent go through to our universities. Twenty per cent only into the high schools. Only about one-third of these complete high school work. Now then, we have about one per cent only of our crop of young people that get vocational training, or one per cent only are fit to go out into the world and go into industry, vocation or employment of any kind—one per cent only. The problem of vocational education is to take the other ninety-nine per cent and give them a training as far as it is possible to do so; and we have to take those just as we find them from the public school, elementary school, and high school, with all grades of development, or all grades of education, starting from the leaving of the

high school down to the infants. That is the problem of education today in Canada. Incidentally, Prof. Cobb mentioned that in that College of Fisheries at Washington the age of twenty is placed roughly, but that it does not require a birth certificate, and also they must be able to read and write. Now why should a boy who has not in many cases had a chance to learn to read and write properly be debarred from being trained at the college? These ninety-nine per cent have as good a right to be trained into life and enter life's work with a training as the one per cent. That is the work we have to do: to train them. Looking at the question of education from its broad standpoint, what is it to do? If we take our young people, we have the raw material or a value which is the greatest the country possesses. The raw material—our young people, more valuable than any other material we have in the country. It is the duty of an educational system to sort out that material and develop it. Develop it, how? Develop those individuals of which the diversity is as great as the number of individuals we have to develop. We have to develop them into citizens. That is the problem. Now the ultimate qualification of a citizen is that he or she shall be able to earn its living; second, he must have interest in and knowledge of and proper regard for the state and society of which he forms a part. That is one of the greatest essentials. Any system of education to be at all complete must provide for their training. Now to me, the lack of interest in the state—and when I say interest in the state, I mean interest in society, interest in your fellow man, and interest in those about you. Interest in the state, because the state is the main thing. Are we developing that? Are we developing in our young people the good will poured out? The ability and desire to co-operate with others? Are we developing that? Are we developing an unselfish interest in society? Now, Mr. Doyle has brought out very completely in the statistics which he gave us a while ago the fact that probably the cream of the fisheries is being destroyed. Why? Is it not because of the selfish interests of those who are in the industry? That is really the sum and substance of it, to put it in clear language. The same is true in regard to other branches of our country's wealth. Our forests, for instance. The country to the south of us have practically lost their forests, entirely by selfish interests, because the individuals in the state have not the interest of the state which they should have—interest in heritage, in posterity, which should have been handed on. I was reading the Report of the Commission which investigated the question of technical education in other countries under the head of James Robertson in 1910. One of the things that impressed this commission in Germany most was the solidarity of citizenship. The interest of the individual citizen in the state was the greatest asset and is the greatest asset of the Germans: a willingness to sacrifice themselves for the good of the community, for good of all. If they hadn't that solidarity, I am sure the war would not have lasted so long. Now, how are we going to do that. We have eighty per cent of our youth who receive no instruction, no guidance whatever after they reach the age of fourteen. Not a bit. Between the ages of fourteen and twenty are the best years of a boy's life for development. At the age of fourteen the boy begins to think and reason, he begins to form habits, he begins to think of his career—

of his life's work. That is the time when he can be moulded and his habits can be formed, and so on. I think our educational system, the training of our boys for any kind of vocational work should begin as soon as they leave the school. In other words, our scheme of technical education should fit closer on to the present system of education. If we do not do that, I am afraid that our system will be a failure. Now that is the problem and policy so far as the Dominion Government is concerned, to take the boys of fourteen and train them in citizenship, vocational training, training for employment is part of that, of course. The Government must achieve results. We must train them for citizenship.

The Honorable Mr. Fisher, who is Minister of Education for England, defines education as "the eternal debt which futurity owes to you." That can be applied not only to education; but to everything else. Our fathers have handed to us a certain heritage, which in many respects is a better heritage than was handed to them. It is our duty, if we wish to hand on a heritage to our children that is better than was handed to us, to be on the alert and progressive in our methods. Are we doing that? Certainly not if we are wasting our resources and not conserving them. That is the point we have to get in our mind in dealing with education. The development of citizens. The ultimate development of citizens, of course, finally, must be their ability to work in and harmoniously with our social order. We wonder why so many of our workers listen to the agitator. We cannot blame them. They never received any instruction from the state as to what citizenship means; and after they reach the age of fourteen, they are left to shift for themselves. Anything that comes to their ears that is reasonable to them, they take it in. If they are trained and knows what it means to be citizens they will not be inclined to listen to purely agitation.

Now, I have spoken in a broad way on this subject. I do not think I should go into details. I was very much interested in Professor Cobb's paper with regard to the details of the work in Washington. I have visited the school in Washington, and Professor Cobb kindly went over the work with me and discussed all the details. There is only that one point where I take exception, and that is the placing of the age limit at twenty years. I thank you, gentlemen. (Applause.)

DISCUSSION ON PROF. GILL'S AND PROF. COBB'S ADDRESS.

MR. JOHN KYLE: Mr. Chairman and gentlemen, I would like to have the privilege of expressing my pleasure of listening to the papers by Mr. Doyle and Professor Cobb, and also to Professor Gill, and assure you that any idea which the fisheries people have in starting a school here for the consideration of subjects pertaining to vocational training, will have the heartiest support of the Provincial Government—the support and sympathy of the Provincial Government. If any man here doubted the necessity or value of a college or school, surely the remarks made by Mr. Doyle are sufficient to remove such doubts. It was understood when the Americans entered the war and floated the large loan which was the largest loan up to that time that had been floated, and they found

themselves face to face with principal and interest, face to face with a debt which would entail payment of \$100,000 per day, the business men of America, financiers, and men responsible for the repayment of this debt, considered matters and came to the decision that if this debt was to be paid it would have to be paid by superior workmanship. Superior minds being brought to bear on the work and problems of their country and they immediately appeal for superior education. If the members of the Canadian Fisheries Association wish to help their industry it will be absolutely necessary to adopt some educational methods of training that will produce better results. The people must be better trained. I agree with Professor Gill that to put the age at twenty years is really too late in the day. Whether those schools will be run in connection with the British Columbia University, or in connection with the Technical School, which has still to be built, is a question which I won't touch upon. But I would like to finish my remarks by asking a question of Professor Cobb, and that is: "What do they charge for fees for the short course and four years' course in the university of Washington?"

PROFESSOR COBB: I may state first in regard to the twenty years age limit, we found we had to put some figure; we had to have some limit. We did not want to receive any child of fourteen years of age. No child of that age is competent to go in there to start on the fisheries course. Unfortunately, there is that gap between fourteen and twenty. We consider it is up to the educational authorities of the country to bring them to us with a seasoned mind, ready to start in; and we thought twenty would be a very good time. We were also up against this proposition, that the High School boys who ought to be finishing up, developed an alarming desire to switch over to us. That was the sole reason for fixing it at twenty. But where we find a boy comes along who has been working along with the business in any shape or form or manner and has the ability, we will take him in, no matter what his age is; but to open it indiscriminately to boys under twenty years of age would be a mistake. The long course you come in and get your degree of Bachelor of Science at the end of the course. As to the charges, on the short course, I had visions at one time that the College of Fisheries was going to create quite a nice little fund, but unfortunately the legal fraternity put the skids on us. In other words, the legislature passed a law exempting returned soldiers from fees at the university. Now the intention of the legislature undoubtedly was to exempt them from fees in all except the short courses, but the legal department said that they were not going to make any close construction of that law, so all the returned soldiers paid no fees. Now, the regular fee is ten dollars per quarter. That goes to what is known as the building fund. It was put on at the request of the students themselves. Before that they did not pay anything, except their regular student fee to their standing organization. I think one-half of them last quarter were returned soldiers. Now the department also informed me—the Legal Department, that all our allies came in under that same provision. That means that Canadians and everybody else comes in under that provision of paying nothing but the ten dollars.

The CHAIRMAN: Gentlemen, the hour is getting late. We do not want you to leave. We have a few

announcements to make. I am going to ask Professor Gill to accept from me and all of us present our very best thanks for his courtesy as well as for the splendid address he has given us. (Applause.) Now, Dr. McLean Fraser will you be good enough to move a resolution of thanks to Professor Cobb.

DR. McLEAN FRASER: I am glad to see that Mr. Cobb does things in the orthodox way. Apparently the College of Fisheries at the University was kept quiet for a year. A good deal has been said about the short courses, and perhaps a great number of you think the short courses are probably the most interesting. In a paper that has been read with regard to the work of the International Fisheries Council, the necessity for a number of trained scientific men in business was very much emphasized. We are short of such men, very short. One of the main reasons as I see it is, that very few young men care to go into such work, because of the present time there is no very definite outlook that they will be able to make a living at it in future years. If a College of Fisheries is started in this province there is almost an absolute assurance that any graduate who had taken the four year course in any branch of the fisheries will be able to get a position that will afford him a good living. The sooner we get such an institution here the better. As far as the situation here is concerned I think what Mr. Cobb said about Seattle will apply here. The site where the university will be situated is just as favorable as the University of Washington. It has the Fraser Valley at its back, and the sea water at its front. We were very much pleased to hear from Colonel Gill the technical end of it, and the assurance from Mr. Kyle that the Provincial Government are interested in doing everything they possibly can. I have pleasure in moving a vote of thanks to Mr. Cobb.

MR. SHORT: I am sure we are all very much obliged to Professor Cobb who has taken such an active interest in all our discussions. I hope the time is not far distant, sir, when Canada will have a technical college for our fisheries. There is no question in the world but what we need it very much; and I trust in meantime that our young men will take advantage of the offer of Professor Cobb as thrown out to us, and especially our returned soldiers where they can go and take that short course on the same basis as our friends in Seattle can.

The CHAIRMAN: There are two papers which we will not have time to hear. With the consent of those present we will let those papers stand as read. The paper by Mr. Burke, on "Some Reasons why British Columbia Raw Salmon Should be Manufactured at Home," also an address by Mr. DuBois Phillips on "A few Points on Marine Insurance."

MR. BURDIS: I regret that we do not discuss in our convention meetings the question of a government of our fisheries, at least, in so far as the Province of

British Columbia is concerned, by a local board, or a board of control, or whatever term may be applied to it.

The CHAIRMAN: I may say Mr. Burdis that that question was before us, and Mr. Doyle was asked to prepare a paper on the subject, and likewise Mr. Darwin. Mr. Darwin thought that a paper on International Treaties and State Agreements, and Mr. Doyle thought that a paper on Geese and the Golden Eggs might be equally interesting, and we accepted those subjects from those gentlemen; and while it is to be regretted that we could not have a paper on that subject, I think that all present will agree with me that the papers that were selected by Messrs. Darwin and Doyle were most interesting, and probably as interesting and instructive as if a paper had been devoted to that subject by either of them. Another point about the administration of our business at Ottawa. This Association had something of importance to announce, but for technical reasons we are unable to do so. But I will ask Mr. Brittain to read you a little item from the paper.

PRESIDENT BRITAIN: As forecasted in my annual report in connection with the administration of the Fisheries at Ottawa, I am glad to announce that a despatch has come through reading as follows: "Ottawa Order-in-Council presented this week provides for transfer of Fisheries Department, to Department of Marine, and also for that the General Superintendent of Fisheries, shall in future be entitled assistant deputy-minister of Fisheries."

I think, gentlemen, that that announcement is one step in the right direction. At our last annual meeting we passed a resolution in connection with the segregation of our fisheries from the Naval Service, and according to this article and information that we can gather from time to time it was considered perhaps the most advisable way to put the department of fisheries into the marine and where it rightly belongs, if it could not be entirely segregated as a different department. That is one step forward in the way we are aiming. I hope that before very long that the fruits of our work will be productive in enabling us to have a Deputy Minister of Fisheries in addition to an assistant deputy. It is the thin end of the wedge at the present moment.

The CHAIRMAN: Our open sessions are now at a close; and just prior to adjournment I want to announce that the Executive of the Association have invited today to luncheon all of the members of the Association. The lunch is now ready, and the members will now repair to the Rose Room as the guests of the Executive of the Canadian Fisheries Association.

Before rising I wish to say that the business session which begins at 2.30 this afternoon is for members only as you will see by the programme. The end of our Convention will be a formal banquet at 7 p.m.



Floating Equipment and Its Relation to Industry

By WALTER LAMBERT, M.I.N.A.

(Hon. Naval Architect, Canadian Fisheries Association).

(Paper Prepared for C. F. A. Convention).

It probably is not generally realised that there is no industry so dependent on floating equipment as the Fisheries, or that there is no other industry in whose development floating equipment of so many and such diverse types have been involved.

It is practically the only business in which vessels are a necessity to production as well as for transportation purposes.

The placing of oil on the market has called for the development of one specialized type of ship construction—the oil tanker; the meat trade has developed the refrigerated steamer—the grain business is responsible for the evolution of a special type for service on the Great Lakes; for the carrying of general merchandize, one general type, the tramp steamer has been deemed sufficient; the coal trade is responsible for the collier; passenger traffic has made necessary the liner; the pulp and paper industry is about to produce a type of vessel of its own; but in connection with the Fisheries no less than six differing types of vessel construction are in service in Canadian waters, not for purposes of transportation, as are the special trade types above referred to, but for the far more vital purpose of production.

Yet, notwithstanding its essential and primary importance, the development of fishing craft has not been fostered with the same care which has been granted to other aspects of the industry. In too many instances the fishing boat is the property, solely or jointly of one or of a small group of fishermen, who not having the capital to obtain what is best, get rather the least equipment that will answer the purpose. The merchant buys the fish so produced, but whether it is obtained through wasteful or economical methods is of little moment to him. It is high time that fishing vessels should be owned and operated by those who are in a position, to experiment if need be, but to obtain the most economical means of producing and delivering the catch.

It would have been fitting to refer to the principal characteristics of the various types of fishing vessels in common use, but time forbids, and there are no doubt many here who are more familiar with them than the writer. Reference must not be omitted however to one development of recent years which is gathering momentum all the time. I refer to the growing use of the internal combustion engine. If there is one way in which the Pacific Fisherman has got ahead of his Atlantic Brother it is in his wholesale adoption of the motor for motive power. In the East, sail area and fine yachty lines with accompanying iron ballast and reduced carrying capacity prevail, and while some vessels condescend to hoist up their sails, or work into harbor on a calm day by the aid of the oil engine, the march of mechanical propulsion falls far short of the attainments of the west, where the term "Auxiliary" has taken on a new meaning, and instead of the motor being the auxiliary motive power, it is the sails which are fulfilling this function, all routine cruising being carried out "under power."

On the surface, propulsion by sails might appear to be the most economical, but that is where it begins

and finishes. A British Government Committee appointed during the war period to supervise motor installations in fishing vessels state in the report "the installation of a motor in a sailing boat at least doubles the productivity of each unit of man power engaged." Power enables a boat to reach the fishing grounds when a sailing boat is idle, to travel in a calm, or on a course that wind and tide forbid to sails, to bring in a catch without waiting for a wind; power makes the fisherman's life less labourious, it economises in man power, and prolongs the period of industry for older men.

On the West Coast, the marine motor is a settled factor in Fisheries development, and though you have recently experienced trouble and annoyance through the withdrawal of distillate, which so many of the local makers of engines are designed to consume, you are satisfied that the sail era is over so far as your activities are concerned.

The only consistent reason accounting for the wide discrepancy of methods in East and West is in the fact above referred to, namely that the ownership lies in the majority of instances with the men and not with the principals, older methods were initiated and handed down from generation to generation with consequent development in degree but not in type.

Once your principals take a hand in the game and give it the same scientific and businesslike attention which is given to the catch after it is landed, these present divergent methods of production of East and West will disappear.

It being apparent that future changes in propulsion of fishing craft will be in the direction of elimination of sails and substitution of machinery, it will perhaps be profitable to investigate the differing modes of mechanical propulsion in reference to their suitability to the various common types of fishing vessels.

For vessels smaller than trawlers, the steam engine with attendant boiler and auxiliary machinery, is out of the question for future vessels. The first cost operating costs, and maintenance charges are all high, while this type of machinery accounts for a very large proportion of the available weight and space in small craft. It is true that almost all fish tugs on the Great Lakes use this system of propulsion but they are placed very unfavourably in the light of possible competition utilizing more economical methods.

For the small vessel therefore, the internal combustion engine is the present logical motive power, but as this type comprises several varying species it is desirable to classify them as follows according to the grade of fuel they use:

- 1st Gasoline.
- 2nd Kerosine.
- 3rd Distillate.
- 4th Heavy or Fuel Oil.

Of these, the first may be practically eliminated except in the few instances when a very low powered installation is required, and for only occasional use. Its chief recommendations are cheap first cost and lightness, but the price of gasoline, now and contemplated, renders it commercially impracticable of adop-

tion in competition with engines using a cheaper grade of fuel. Also, gasoline engines, as a class, are not built to withstand the continuous heavy treatment usually meted out to commercial installations. A fishing boat engine must be able to tow a heavy trawl slowly and maintain its necessary rate of revolutions under the long continued strain of a severe load. The steam engine can turn its propellor at any speed below its normal moderate rate. The average gasoline engine will neither develop its power nor maintain the necessary heat below the high rate of revolutions.

The Kerosine engine has been for many years the type of engine most popular in the Fisheries of the old country. It possesses all the advantages of the gasoline engine, while the disadvantages are in a lesser degree. The fuel is cheaper and the engine more robust in its proportions, it having been developed principally for commercial usage. As before hinted, it has been more extensively developed in the old country than in America, though the advances in the price of gasoline in recent years caused American manufacturers to devote more attention to it. In general proportions and usefulness, the Kerosine Engine, as developed in the U. K. approximates very closely to the type of engine you have been running on distillate. For the small boat requiring an installation up to say about 10 H.P. the Kerosine engine is quite satisfactory from the viewpoint of service and economy, but for powers in excess of this, engines using a yet cheaper fuel are desirable.

In view of the threatened disappearance of distillate from the market little need be said of the engine specially designed for its use, and while experiments are being conducted to render existing engines capable of digesting fuel oil, it is probable that the disappearance of this grade of fuel will almost be a "blessing in disguise" in that it will stimulate the manufacturer to produce and the Fisheries to adopt the semi-diesel or hot bulb engine using the cheaper grade of heavy oil.

It may here be remarked that the term crude oil as sometimes applied to this oil is somewhat of a misnomer as crude oil is properly speaking the oil as produced from the earth before gasoline and other lighter oils are extracted from it, whereas the oil here referred to is the residue after extraction of the lighter oils. Possibly "Fuel Oil" is the most suitable term to apply to it.

The Semi-Diesel or Hot Bulb engine originated in Holland some twenty years ago, and has been built in small powers in increasing numbers by Dutch and Scandinavian firms principally. It is only of recent years however that the revival of the sailing ship has brought this type of engine to the front in America through its use for auxiliary power in such vessels. There is little doubt however that in consequence of their economy, simplicity and reliability, as recently evidenced they are destined to become the motive power of the future within certain limits, and it is for these reasons that there are more of these engines in use by the fishing fleets of Europe than any other type. The principal objection to them is that instead of the fuel being ignited by an electric spark, as in the Gasoline or Kerosine engine, a bulb or plate requiring pre-heating for about 5 to 20 minutes according to size of installation, is used as an ignition agent. This objection is of comparatively little moment however and they compare very favourably with the preparatory

work necessary in the case of the ordinary steam outfit.

It is a matter of opinion whether this type of engine is altogether desirable for the full powered trawler, owing to the difficulty of adopting it satisfactorily to the trawl winch which requires a very flexible operating power. This objection can readily be obviated by the installation of a donkey boiler to provide steam for working the trawl winch, windlass and steering gear. The disadvantage however of a special installation to provide power for auxiliaries is obvious.

Without going into technical details, which is outside the province of this general survey of floating equipment it may be noted that the economy claimed for this type of engine over a coal fired installation assuming 300 H.P. in each case is said to be as follows:—

	Steam-ship	Motor-ship
Cost of fuel and lubricating oil per 24 hour day	\$57.60	\$22.80
Fuel space required for 24 hours	408 cu. ft.	50 cu. ft.
Space occupied by installation	1116 cu. ft.	605 cu. ft.

The above shows the oil engine in very favourable light but these are other advantages which may be briefly enumerated as:—

Increase in cargo carrying capacity—space and weight.

No standing expense for keeping steam up when not required.

Reduced crew.

Fuel supply is regulated mechanically instead of by stokers, giving constant and dependable speed.

Time saved in bunkering.

Lighter depreciation and less repairs.

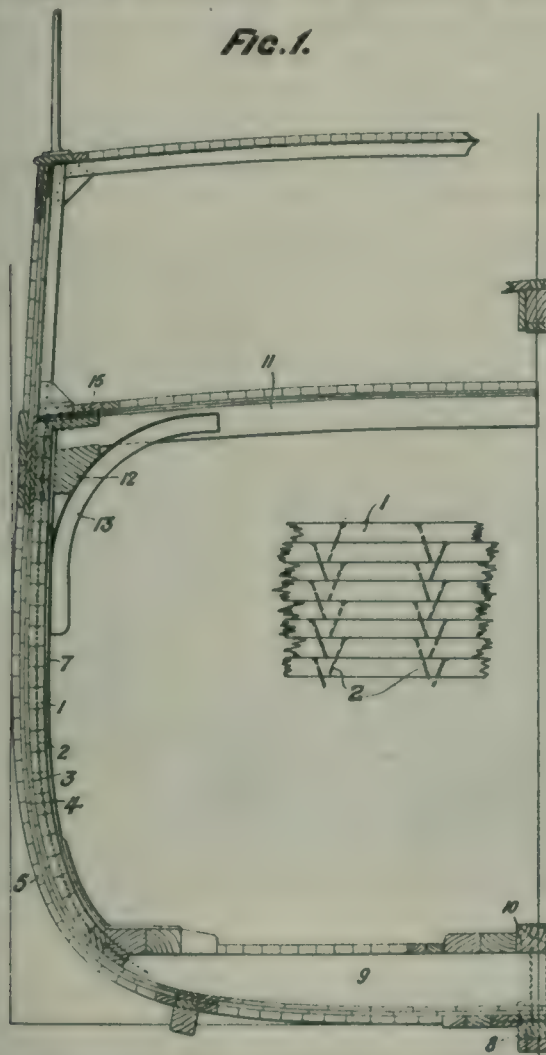
It is but fitting that reference should be made to recent deplorable disasters, in the loss in the Atlantic of three wooden trawlers installed with semi-diesel engines. All three vessels were comparatively new and lost within a short period of each other. In that that these vessels were more or less experimental both as regards machinery and hull, a conclusion that one of both of these experimental features may have been wholly or partly responsible for these regrettable occurrences, is apt to be given credence to. Definite information covering losses is lacking and it is difficult therefore to surmise the causes or contributing causes to the disasters. It is however quite certain that there are many makes of heavy oil engines on the market, which, properly installed will give efficient, dependable and safe service. It is just as certain that there is no inherent reason why a carefully designed, properly constructed wooden trawler hull should not give equally satisfactory service. Nevertheless a steel hull is the better proposition for the trawler on economic grounds in that the first cost is very little greater, while in upkeep and length of service it shows to greater advantage.

For vessels smaller than trawlers the wooden hull will continue its supremacy, as in small sizes wood construction is cheaper than steel and excessive depreciation more easily prevented. It is curious to note however how little change has developed in wooden ship construction. To all intents and purposes the general distribution of its members and fastenings is the same now as it was decades ago.

An invention has recently been placed on the market however which marks a radical departure from previ-

ous practice, and which is worth the study of all those interested in the evolution of fishing craft. This is the Soper-Wilson system of frameless wooden ship construction, a system evolved and perfected conjointly by a well known British yacht architect who has had considerable experience in wooden construction, and a practical shipwright who has shown his innate ability in another sphere by becoming a justice of the peace and a prominent and eminently sane labour leader. It was evolved as a War Emergency Measure for building in England, where timber, particularly of large scantlings was scarce and expensive. Fully detailed plans, modelled on this method of construction, were prepared and approved by Lloyds, and the ship-

Fig. 1.



ping controller had signified his intention to authorize the placing of contracts, when the armistice was declared, resulting in a cessation of all official ship-building activity. Since then, a number of barges, a 750 ton coasting steamer, and an auxiliary ketch have been under construction by owners in England, who have decided to build, but owing to the prohibitive price of timber, have deferred doing so far a year or two. This condition does not obtain in Canada, and the advantages claimed for this invention are so great and so peculiarly applicable to fishing vessels as to merit serious consideration for new construction. These principal advantages are briefly as follows:

A saving of labour, (estimated at 25 per cent).

A saving of space (due to omission of frames and ceiling).

A saving of weight (and therefore an increase in cargo carrying capacity).

A saving of timber (in quantity and value, smaller scantlings being used).

The elimination of treenails (short iron fastenings only being required).

The elimination of salt (there being no space between frames, outer planking and ceiling).

The elimination of frames (strength being obtained by new constructional principles).

The above sufficiently indicates the radical nature of this proposal to arouse interest in its details, and these can best be described by quoting extracts from the Patent specification as follows:—

"The object of the present invention is to provide a novel and improved construction by which the output of wood strips can be greatly increased without detriment to their strength of seaworthiness, and moreover a construction in which frames are not required, so that crooked oak timber, and the labour involved in sawing out, moulding and preparing the frame timber and setting them up can be dispensed with.

Now according to the present invention the structure consists of an inner layer of thick planks extending fore and aft of the vessel and in edge contact with each other, and these thick planks are secured one to the other by being edge bolted together. The bolts are located in vertical series, equi-distant apart, and each series comprises two lines of bolts, the bolts of one line being inclined diagonally in opposite direction to the bolts of the other line of the same series, so that in effect, the bolts form dovetail fastenings extending in lines in the direction in which the transverse frames would expand, if the ship was of the usual construction.

During the erection of the vessel the fore and aft planking is temporarily supported by rough constructed transverse moulds which are afterwards removed. After the thick planking aforesaid has been fitted, the skin of the vessel is completed by a plurality of layers of thin planking applied to the outer surface of the thick planking, these thinner layers extending diagonally from keel to gunwhale and crossing each other, and then the skin of the vessel is finished by a layer of outer fore and aft planking sufficiently thick to enable the edges to be caulked, and the whole structure is fastened together by clenched bolts which pass through the outer fore and aft planking, through the diagonal thin planking and through the thin fore and aft planking aforesaid."

To illustrate the construction graphically, a midship section drawing is shown, on which the salient features are indicated by numbers. (1) is the thick fore and aft planking connected by (2) edge bolting (3) and (4) represent the thin diagonally laid layers of planking which are secured in place by nails (5) is the fore and aft outer planking for caulking (6) indicates the clenched through bolts connecting up the whole structure. (7) is an inner layer of thin vertical planking, which acts only as a lining and may be omitted in small vessels. (8) is the keel similar to the usual construction, (9) are floors extending over bottom of vessel. (10) is the centre keelson as in ordinary construction. (11) are the beams. (12) is the shelf. (13) angle or tee iron knee at every beam. (15) is the deck stringer.

While there must always be some hesitancy in breaking away from old methods, the fact that this

system has received the approval and acceptance of both Lloyds Register and the Shipping Controller should go far to demonstrate its utility to the most sceptical, while the alleged advantages are so obvious and important as to merit a serious trial.

The visit of Admiral of the Fleet Lord Jellicoe is a matter of recent history, and that portion of his report dealing with the proposed provision of fighting ships has been given wide publicity in the Press. It is not so widely known however that this same report has a great deal to say which is very pertinent to the vessels of the Canadian Fishing fleet and the vessel policy of Fishing vessel owners.

For reasons of expediency and economy, the Government has expressed its intention of deferring action in furtherance of Lord Jellicoe's recommendations. There is little doubt however that when the expedient time arrives his views will receive careful consideration, and many, if not all, of his suggestions given effect to. It is desirable consequently that the Associ-

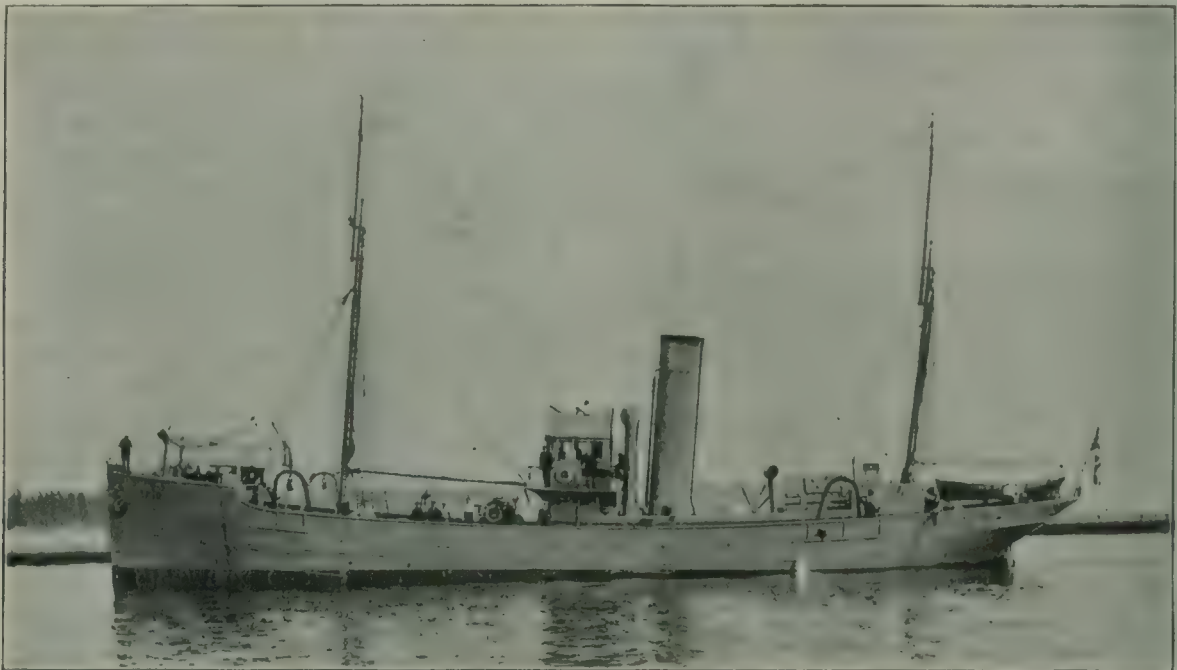
the navy may also stimulate recruiting among the seafaring and fishing population, who would thereby more clearly understand what service in the Reserve implies."

"As regards fisheries, development and the institution of modern methods are desired by all, and the naval staff should endeavor to assist such development along lines which will tend to produce vessels as suitable to naval war purposes as is possible without interference with their legitimate occupations."

"A member of branch of the naval staff should be concerned with trade and fishery questions, and the war training and the constructional work involved."

"Designs of fishing craft should be encouraged along lines tending to efficient auxiliary vessels for naval use in war time, as far as is consistent with their ordinary work."

One is struck immediately by the coincidence that while the Government have postponed action due primarily to reasons of economy, the particular aspect of the question which refers to the fisheries, as above



CANADIAN NAVAL TRAWLER.

ation should take this opportunity of at least acquainting themselves with the aspect of the naval situation which are relevant to their interests.

The following are extracts from Lord Jellicoe's Report:—

"It is very desirable that Canada should become independent of outside assistance in the work of mine sweeping. The simplest, and by far the cheapest, method of obtaining in war the services of efficient mine sweeping vessels is by the encouragement of a trawler fishery service on both the Pacific and Atlantic Coasts during peace. Steam trawlers are already operating on both coasts, and have proved to be commercially successful. This matter is of such importance on economic grounds that I beg to draw special attention to it."

"It is also very desirable that the personnel of the mercantile marine should be sufficiently trained in naval warfare in time of peace to enable it to co-operate with the navy in time of war. Close touch with

quoted is specially impressed by Lord Jellicoe on economic grounds. Inasmuch as these recommendations affect private enterprise chiefly, necessitating slow development to be commercially successful, there is every incentive for the Industry to see what is possible to be done on these lines without delay.

The experience of the war evidenced that mines were useful both offensively and defensively in unprecedentedly large proportions, necessitating the employment of a large number of mine sweeping vessels. It was further shown that the ordinary type of modern fishing trawler was admirably adopted for this purpose. These vessels were both commandeered from the British fishing fleets and specially built by the Admiralty in large numbers and the arduous work done by them and their heroic crews constitutes one of the romances of the war.

Whatever may be the strategic developments in the methods of naval warfare as the outcome of recent history, it is a foregone conclusion that mine warfare

will flourish in the future at least as much as in the past.

If it should happen that the Coast of Canada at any time are evolved in naval operations, it is quite certain that the extensive service of trawlers will be imperative. It is therefore quite evident that Lord Jellicoes' recommendation regarding the encouragement of a trawler fishery service is a very pertinent one at this time. It is equally fitting that this occasion be taken to take counsel as to what mutual assistance the Government and the Industry can render to the nation.

As a basis of the study of this question it is generally suggested that owners agree that said trawlers as are built in the future for Canadian Service be constructed in accordance with special requirements as determined by the Departments naval advisers. Further that during the season of the year when fishing is the least productive, a period be set apart when approved vessels be assembled and placed under the direction of naval officers and engage upon manoeuvres to educate the crews in war service requirements. During this period the crews to go on Government ratings. At the same time vessels to undergo special inspection to determine if they are being kept up to Naval Requirements in the way of repairs, upkeep, etc. All such approved vessels to be freely at the service of the nations in time of war.

The Government on the other hand to be responsible for a percentage to be agreed upon of the cost of such vessels as are built in accordance with their requirements. Further that they pay an annual subsidy, to be agreed upon, in respect of all such vessels as are found to be at aforesaid annual special inspection, and participate in the annual manoeuvres.

It is claimed that a scheme based on these general suggestions will go far in conformity with Lord Jellicoes' requirements, comprising a very economical and valuable naval reserve in the country's hour of need, while the emoluments if sufficiently large will be of considerable assistance to the industry.

It may be thought that the constructional requirements of the naval service might be such as to be prejudicial to successful commercial operation, but this need not necessarily be so. In fact the chances are rather the reverse, such requirements would be likely to conform generally to the following:—

1. Steel construction to classification standards.
2. Reciprocating engine and boiler to Canadian Steamboat Inspection.
3. Minimum size bunker capacity and speed.
4. Suitable trawl winch and gear.
5. Hull stiffening and base ring for gun on Fore-castle with adequate depression and training arc clearances.
6. Wireless telegraphy, semaphores, morse lamp, and signal yard.
7. Stiffening and clearance aft for the installation of depth charge gear.
8. Arrangements for quick addition to crew accommodation, if necessary, for naval crew.
9. Suitable compartment for magazine forward and handing-up scuttles fitted.

There is no reason why any of these possible requirements should interfere with the commercial suc-

cess of the vessel provided she was designed with these features in view.

The Government on the other hand might consider that such a peace time expenditure on their part, as indicated was unwarranted, but it is, to say the least, very doubtful if many trawlers would be available in time of war without Government assistance.

Failing such organized assistance such trawlers as as existed would have been built on no consistent plan so far as naval requirements were concerned and would possibly be in a far from efficient state of repair. There would accordingly be at the crucial hour an almost certain and vital shortage of vessels, with the necessity of considerable overhaul and special outfitting for service. The crews would be strangers to naval practice and discipline, and altogether, the advantages the above outlined scheme holds out from a national standpoint can hardly be overestimated, while the cost to the country would be relatively small.

This leads one to consider the very difficult question—does the Industry warrant the purchase and placing in service of further steam trawlers—and notwithstanding Lord Jellicoes assertion that trawlers have proved to be commercially successful on both coasts, it is doubtful if large additions could be made in the present state of the market.

In the first place, new tonnage is very much of a luxury at this time, with little immediate prospect of reduction in cost. Then it is impossible to shut one's eyes to the fact that the possibilities of fish consumption in Canada are strictly limited. The supply of fish by employment of existing fleets, is equal to if not exceeding the demand, notwithstanding extensive advertising of fish days, the benefits of fish consumption, and as a cure of the High Cost of Living. Canada is a country of so great an area, and is, and will be for a long time, so sparsely populated that fish transportation is a problem difficult almost to point of prohibition. This is possibly the chief condition operating in preventing a large expansion in home consumption. The only hope for a greatly increased demand, requiring an augmented supply, and making possible the use of trawlers on a large scale appears to live in the building up of the export trade. Efforts have been made during the past few years along these lines, it is true, but have been largely nullified by the miserable shipping facilities existing during the war period. Possibly with the advent of the Government mercantile ships, this situation will improve and special facilities granted, but if not, then it is time the Industry became independent of shipping combines, and provides its own shipping facilities. Why not for instance, build and operate a refrigerated fish carrier through a common holding company, such as this Fisheries Association might well be. It would be necessary to incorporate in this scheme a cold storage plant at the port of shipment, where all trawlers could discharge and store their catch as necessary. From the point of view of operating economy as large a vessel as the trade prospects would permit would be advisable as the following table of economy demonstrates. Surely if it is a commercial possibility for European trawlers to fish in Canadian waters, it is feasible for you to export in large quantities by the employment of a carrier designed to meet the handling and storage of fish economically and quickly; whose movements you will control at will and to the best advantage of the common good of the industry.

Comparative Economy of Cargo Vessels.

Deadweight capacity tons	2,500	5,000	10,000	15,000	20,000	25,000
Length of vessel—feet	215	300	430	510	590	675
Beam—feet	36	44	58	68	72	80
Draft loaded—feet	22	25	28½	32	34	36
Speed—knots	11	11	11	11	11	11
Coal per hour—lbs.	2,920	3,600	5,000	6,380	7,350	7,950
Indicated horse power	1,460	1,900	2,800	3,750	5,000	6,000
Coal consumption—lbs. pre 100 ton miles	10.6	6.5	4.5	3.9	3.3	2.9

The following are further abstracts from Lord Jellicoe's report of interest at this time:—

"As a result of the experience of the war, it is suggested that while the greatest freedom should be allowed to sea-borne trade and fishing in time of peace, an advisory organization should exist to guide trade in channels most beneficial to the whole country's

be in a position to take up their war time duties without difficulty or loss of time."

Arrangements concerning the strengthening of hulls to take defensive armament in merchant ships and fishing vessels would be dealt with by this shipping Committee."

Here is forecasted the formation of a committee, with onerous duties in time of peace, but of vital national importance in time of war, and to which a representative of the Fishing Industry will apparently be invited.

The occasion of the constitution of this committee will be time enough to select a man, but it is not too early to have in mind his desirable qualifications. He must be pre-eminently a shipping man, with a wide knowledge of the fish business, and the confidence and respect of its adherents. He must have an intimate understanding of the various types of fishing vessels and their operation, a familiarity with general shipping questions, and last, but not least, a capacity for working with Government officials.

NEWFOUNDLAND'S FISHERIES

The fisheries still comprise Newfoundland's basic industry and during 1919 the total value of fishery products was \$32,792,271 as compared with \$25,547,334 in the previous year. The year was a poor one for the fisheries on the whole, despite the increased revenue derived from them, and many seal, lobster and herring fishers suffered heavy losses.

Due more to the increased prices of commodities than to an increase in actual trades, the figures for the exports and imports of the island have increased greatly.

Year	Imports	Exports
1914	\$15,193,726	\$15,134,543
1915	12,350,786	13,136,880
1916	16,427,336	18,969,493
1917	21,318,310	22,381,762
1918	26,892,946	30,153,517
1919	33,297,184	36,784,616

Net increase in import trade, 1914

to 1919, inclusive \$17,284,819

Net increase in export trade, 1914,

to 1919 inclusive 22,111,727

Net increase in import trade for

the same period 16,284,819

Total net increase Dominion's trade

1914 to 1919 38,396,546

The total gross trade of last year.

1919, was \$70,081,800

Compared with (in 1918) 57,046,463

Showing an increase over preced-

ing year of 13,035,337

—Financial Post, July 9



WALTER LAMBERT, M.I.N.A.

development. This organization would probably in war time become mandatory instead of advisory, and would appear to be the most suitable organization for the direction of shipping by mercantile experts in conjunction with the naval staff."

"It is proposed that a shipping committee comprising representatives of ship owners, fishery firms, the Marine Department, and the naval staff, should meet periodically to consider questions of general development of marine resources. Their functions would be purely advisory in peace, but in war they would take control of shipping, their Chairman acting as Shipping Controller."

"In this way organizations already existing would

Some Points on "Marine" Insurance

By

B. DUBOIS PHILLIPS, MGR. DALE & CO.
VANCOUVER

(Prepared for C. F. A. Convention).



I have been asked to address you to-day on the subject of "Marine" Insurance, and I must admit I am considerably diffident in doing so, as I feel that in speaking to the representatives of one of the basic industries, at any rate of this part of the Continent, I am talking to men who, in the nature of things, and in view of the fact that "Marine" Insurance is one of the necessities of their business, are fully conversant with this subject.

I assume, however, that possibly there are some gentlemen here whose knowledge of "Marine" Insurance is equal to my own knowledge of the Canning Industry. I am aware that there are large quantities of salmon on this coast, and I also know that I can go to any store and buy canned salmon, but I am, unfortunately, ignorant of the process by which the salmon reaches its half-pound tin. Similarly, I feel that some of you, whilst you know that your vessels and your shipments are covered by "Marine" Insurance, may not be aware of the actual application of the terms under which they are covered, and methods of adjustments in cases of loss.

I do not propose to deal with the history of "Marine" Insurance, except to say that as you all know it is the oldest form of Insurance known.

The form of policy, so far as hulls are concerned, is, generally speaking, the original form drawn up by Lloyds about the year 1555. To the ordinary man of the street it is somewhat in the nature of a Chinese puzzle, and opprobrious epithets have been cast at it from time to time by our leading judges.

It may be asked why, following the evolution of modern industry, has this form not been changed, and the wording so altered that it can be readily understood? The answer seems to be that it is better to let well alone and to realize that by a long series of legal decisions, the meaning of practically every word and phrase in the original form has been fixed, and if a new form were brought out, it might only be the means of putting more money in the lawyers' pockets.

I once read in the "Saturday Evening Post" an explanation by Mr. Will Payne, of a "Marine" policy, and it struck me as being very much to the point. It runs as follows:

"No doubt, trying sophomorical experiments in shipping legislation would strike the British marine mind as a sort of temporal sacrilege; for that mind is a highly conservative institution. When Christopher Columbus was in swaddling clothes some adventurous fellow countrymen of his had drifted up to London, where they introduced the art of finance. One branch of the art consisted of insuring ships, that being a much older form of insurance than either life or fire. It is said to have been practiced in the twelfth century, and I believe there is extant an English policy dated 1555. Now the standard insurance policy on a ship today is substantially in the same form the Lombards drew up in the middle ages. Having a

thing that works satisfactorily the British see no reason to change it.

"Lloyd's, where much of the world's Marine Insurance is written and which for generations has been almost a synonym for shipping the world over, derives its name from an eating house which one Edward Lloyd conducted in Tower Street in the days when docks were unknown and ships used to lie in the Thames, off the Tower of London.

"This singular insurance policy, as used today, begins with the capital letters S.G. in the upper left-hand corner. Nobody knows what the letters signify. Some think they stand for "Ships and Goods," while other learned persons incline to the opinion that they mean *Salutis Gratia*. But they are very good letters, doing no harm, and nobody would think of leaving them off. The policy proceeds to declare that insurance is given—upon any kind of goods and merchandise, and also upon the body tackle, apparel, ordnance, munition, artillery boat, and other furniture of and in the ship or vessel called the—whereof is Master, under God—or whosoever else shall go for Master in the said ship, or by whatsoever other name or names the said ship and the Master thereof is or shall be named or called.

"And so on. As a matter of fact, the blank for the name of the "Master, under God," is never filled in nowadays; but nobody would think of leaving the blank out of the policy. Farther along, the policy reads:

"Touching the adventures and perils which we, the assurers, are contented to bear and do take upon us in this voyage, they are, of the seas, men of war, fire, enemies, pirates, rovers, thieves, jettisons, letters of mart and countermart, surprisals, takings at sea, arrests, restraints and detentions of all kings and princes and people of what nation, condition or quality soever, barratry of the master and marines, and of all other perils, losses and misfortunes that have or shall come to the hurt, detriment or damage of the said goods and merchandises and ship.

That would appear to cover every possible damage occurring through an act of war; but, in fact, no damage occurring through an act of war is covered by the insurance. They leave all the foregoing rigmarole in the policy and then cancel it by adding in red ink that all consequences of warlike operations are excepted. But the moment there is a threat of war—to say nothing of war itself—shipowner and shipper want vessel and cargo insured against the war risk. So they pay an extra premium and the red ink clause, which cancels the old clause, is struck out by drawing a line through it. That seems a somewhat clumsy way to go about it, but it works very satisfactorily.

"Something over a hundred and fifty years ago iconoclastic hands were raised to amend the ancient and sacrosanct form of a Lloyd's Insurance Policy; not, you understand, incorporated in the body of the

policy—iconoclasm itself would not go that far—but tacked on at the bottom, below the signatures. This portentous innovation reads as follows:—

"N.B.—Corn, fish, fruit, flour and seed are warranted free from average, unless general, or the ship be stranded; sugar, tobacco, hemp, flax, hides and skins are warranted free from average under five pounds per cent; and all other goods, also the ship and freight, are warranted free from average under three pounds per cent, unless general, or the ship be stranded.

"That sounds like an exercise in composition by Class "B" in a lunatic asylum, and it means substantially that the underwriters refuse to recognize petty damage claims arising under certain conditions."

In order to bring the few remarks I have to make more clearly before you, I am going to assume that a cannery is to be built somewhere up the coast, and try and see what form of insurance would be required, and what protection the cannery owner would have under this insurance. In the first place the materials would have to be assembled for the building of the cannery. A large portion of these would probably be shipped from Vancouver, and it is more than likely that such items as lumber and the heavier machinery would be sent up by scows.

The cover which is usually granted to cargo on scows, is against the risk of total loss of the entire shipment only, as underwriters feel that it is too hazardous a risk to enable them to insure against partial loss. This wider form of insurance, however, can be obtained but naturally at a considerably higher rate.

Let us assume that the remainder of the materials required are sent up by steamer; these would be insured under what is known as an "F. P. A." policy, which is the most common form of "Marine" insurance on cargo, and possibly the least understood. The letters "F.P.A." mean "Free from Particular Average," (the word average signifying loss). The "F. P. A." Clause in general use reads as follows:

"Free from Particular Average unless the vessel or craft be stranded, sunk, burnt, on fire or in collision. The collision to be of such a nature as may reasonably be supposed to have led to the damage claimed for."

This simply means that underwriters are not liable for partial loss or damage unless one of the contingencies mentioned above has arisen.

For example, let us assume that the Steamer encounters heavy weather, as a result of which, the goods on board are damaged. Under an "F.P.A." Policy the assured would have no claim on his underwriters, but supposing on the other hand that at one stage of the voyage the vessel went aground, not necessarily incurring damage of any sort either to herself or to the cargo, the mere fact of her grounding would, in insurance terms, open the warranty and allow the assured to collect for the damage by heavy weather, although it had no relation whatever to the vessel's going ashore.

In the case of collision, however, as will be seen, the damage to be recoverable must be the direct result of the collision.

The Clause quoted above is what is known as the English form. The American Clause, which is not so generous reads:

"Warranted free from Particular Average unless caused by the vessel being stranded, sunk or burnt, etc."

So that in the case mentioned above, the assured would have no claim under under the American Clause because the vessel in point of fact had stranded during some turn of the voyage. The same remarks hold good with regard to sinking and burning.

If the assured wishes to obtain more protection than is given under an "F.P.A." Policy, he can, in most cases, at a higher rate of premium, obtain "With Average" Insurance, and under which he can recover any damage caused by "Marine" peril, provided it amounts to a certain percentage, usually 3 per cent of the value of the goods.

Having arrived at the proposed site of the cannery, the goods are unloaded, the cannery is built and starts operations. In connection with these operations certain floating equipment will be necessary, such as cannery tenders, to assist in the work adjacent to the cannery, and we will assume further that the cannery owner decides to have a steamer or one or two auxiliary sailing vessels to take the fish from the cannery to the point of distribution.

The insurance on cannery tenders is, as a general rule, looked upon very favorably by underwriters for the reason that their operations are more or less confined, and as they form an essential factor in the work of the cannery, it is felt that special care is taken to avoid accidents which may put them out of commission at the busiest times of the year.

The policy under which these craft are usually insured, covers, as a rule, all damage due to "Marine" perils if they amount to more than a specified sum, usually between \$50.00 and \$100.00. The annual rate running from seven to nine per cent.

The form of insurance granted to steamers varies with their age. A new vessel would, of course, get the most generous cover, which would pay for damage irrespective of amount, if the vessel had been stranded, sunk, burnt or in collision, and if none of these contingencies had occurred—for damage to an amount, as a rule, of 3 per cent of the vessel's value.

As her age increases, the conditions will be made more stringent. After a time one-third will be deducted from the cost of all repairs to cover ordinary depreciation, and eventually she would probably arrive at the point where the owner would have to stand a certain percentage of each claim, usually fixed at 5, 10, or 15 per cent of the vessel's value.

If, instead of steamers, a sailing vessel be used she would, on this coast, be insured under what is known as the "San Francisco" form of policy, which excludes all damage unless amounting to, as a rule, 5 per cent or 10 per cent of the vessel's value, and also provides for the deduction of one-third from the cost of all repairs.

In addition to insuring the steamers, it is also customary to insure outfits, by which is meant, dories, lines and equipment used in fishing, which are usually covered under an "F.P.A." policy.

So much for the insurance on hulls.

The modern methods of "Marine" Insurance enable a fish canner or packer whose plant is located in the most remote and inaccessible inlet of our coastal waters, to enjoy the same protection as is enjoyed by

our largest importers and exporters, whose business originates at any of the great world ports.

The fish business is to a great extent "seasonal," involving the sending of materials and supplies to the different canneries in the early Spring and bringing down the pack in the Fall.

The custom amongst the largest packers is to enter into a contract with responsible underwriters, at the commencement of a season, under which the "Marine" hazards for the entire season are covered.

A large business is done with fish packers, whose plants are located in the Bering Sea, where communication is difficult and at times impossible, as the business is carried largely by the old-time sailing vessels and insured under open covers. These vessels carry from 50,000 to 60,000 cases of salmon, which at the present time of rates would necessitate a cover of \$600,000.00. These covers are made up at the beginning of the season and declarations are not made to the underwriters until the vessels arrive at their home ports with the pack.

The fact that \$600,000.00 insurance can be obtained on the cargo of a wooden sailing vessel, some of which are from 30 to 50 years of age, demonstrates the confidence which underwriters place in the management of our fisheries, and the merits to maintain this confidence on the part of the packers.

It is not necessary to fix the price per case at the commencement of the season, but it is sufficient if the underwriter is advised of the value per case prior to the shipment being water-borne. Practically all insurances of this kind are effected on an "F.P.A." basis.

I am now going to say a few words with regard to the settlement of claims, which, after all, is probably the point in which the assured is most interested.

First then with regard to the hulls. Let us assume a boat valued at \$40,000.00 with insurance of \$35,000.00 goes ashore and sustains considerable damage. She is placed on the dry dock for repairs, and it is found that the cost of effecting these will amount to \$10,000.00. Taking the three classes of craft referred to above, and the policies effected on them—in the case of a cannery tender, an assured could recover 35/40ths of the loss, and the same in the case of a steamer, but in the case of a sailing vessel, insured under a San Francisco form, one-third would be deducted from the cost of repairs, so that he can only recover 35/40ths of \$6,666.00.

As regards claims on cargo, it must be borne in mind that when goods arrive at destination, the assured cannot refuse to accept them, merely because they are damaged, he must take delivery and pay all charges, so that the underwriter, if he decides to pay a Total Loss and take over the goods, can receive them free of cost.

It is settled law that the basis of adjustment of losses, in connection with cargo, is the sound market value at destination, and in this connection two instances will show how this works out.

Supposing for example, that a consignee is importing a shipment of goods, the invoice price of which is \$1,000, he probably insures for \$1,100, covering his profit of 10 per cent. The goods, on arrival at destination, with the addition of freight and duty, are probably worth say \$1,500. Now if they arrive damaged, the first thing to be ascertained is what their whole-sale value in damaged condition actually is.

Supposing that the consignee feels that he can dispose of the goods for say \$1,200, or in other words, that there is a damage of 20 per cent, and this basis is agreed to by underwriters, he recovers from underwriters 20 per cent of the insured value or \$220.

If, on the other hand, no agreement can be reached as to the actual percentage of damage, the only method of arriving at the amount of the loss is by selling the goods at auction, and assuming that they realize \$750 gross, or in other words, that there is a 50 per cent loss on the sound value, the consignee can recover 50 per cent of the insured value, or \$550.00.

Now in the first instance, it will be seen that the loss on the sound value is \$300, and the consignee recovers only \$220, and in the second instance the consignee's loss is \$750, and he only recovers \$550. This difference is a frequent cause of dissatisfaction and complaint on the part of consignees as they feel that they are not receiving justice from underwriters. As a matter of fact this is not the case.

The value of any shipment of goods at destination is really made up of four component parts:

1. Invoice value and shipping charges.
2. Duty.
3. Freight.
4. Profit.

In the cases above mentioned, and this is the basis on which goods are usually insured, the consignee covers his invoice value and his profit, but does not insure the duty and the freight payable at destination. Now, if one had a 50 per cent loss, it affects all the component parts that go to make up the value of the goods, and to take the last case quoted as an example, what the consignee recovers from his underwriters is 50 per cent of the invoice value and 50 per cent of the profit, both of which are insured, but he does not recover 50 per cent of the duty and freight, which amount to \$200, for the reason that he has not insured them. It therefore follows that if a consignee wishes to completely cover himself in case of loss, he must, in addition to insuring the invoice value and the profit, cover also the duty and the freight payable at destination, against "Particular Average" only. He does not need to insure these against "Total Loss" or "General Average" because in the event of the goods not arriving, there will be no duty or freight to pay.

The above remarks would not, of course, apply so far as freight is concerned, if, instead of being payable at destination it were prepaid. In that event it would be added to the value of the goods and insured, and the proportion of the insured value which the consignee would recover would include a like proportion of the freight.

In the case of canned salmon, shipped from one Canadian port to another, no duty would be payable, and the value, which would form the basis of the insurance would probably be the same at the cannery as at destination. The question therefore as to whether the assured, in case of loss, would receive a full indemnity, would depend on whether the freight, if payable at destination, was insured or not.

Now a word with regard to General Average. All marine policies cover the risk of General Average, a term which is not very clearly understood. Numerous text books have been written on the subject and to anyone wishing to make a study of it, it undoubtedly presents numerous complications, but its basic prin-

ciple is that of equity. Probably the best definition of General Average was given by Mr. Justice Lawrence in the year 1801 and is as follows:—"All loss which arises in consequence of extraordinary sacrifices made or expenses incurred for the preservation of the ship and cargo comes within General Average and must be borne proportionately by all who are interested." To take a concrete example—Supposing a ship goes ashore and in order to float her she is lightened by throwing overboard some of the cargo—this is also incurred to save all the interests at risk and must be contributed for by each in proportion to its respective value at destination. Similarly, if the cargo in one hold is on fire, and in order to prevent the fire spreading to another hold is flooded, with consequent damage to the cargo stored therein, the loss thus incurred to the cargo which, was not actually on fire itself is contributed to by all the parties benefitting thereby.

From these two examples it would seem that the adjustment of General Average loss is a simple matter—such, however, is very far from being the case and it is often a question of very considerable difficulty to decide whether a loss properly belongs to General Average or should be paid for specifically by any particular interest.

It may be of interest to mention here three points on which Marine Insurance differs from Fire Insurance.

If you have a shipment of goods for which you have paid, say, \$1,000, and you figure that on arrival here they will be worth, say, \$1,500, you are perfectly entitled to insure them for that amount. Suppose the market drops and as a matter of fact they would only be worth \$750 on arrival, and for the sake of argument, say the ship and cargo are totally lost by fire a day before they arrive at destination, you are entitled to recover the full face value of the policy, which in this particular instance would show a profit of \$750. If these goods had been insured under a "Fire" policy all that you could recover would be the cost of replacing them, or say \$750.

If you insure your house under a "Fire" policy for \$5,000, and you have a loss of say \$2,000, the policy is automatically decreased by that amount, and in order to reinstate it you have to pay an additional premium, but if you insure a ship for that amount you may have, during the year, three or four losses of \$2,000, and end up with a total loss, for all of which underwriters would be liable, nor would they receive any further premium than the amount paid them when the policy was originally taken out.

On the other hand, if you have a vessel worth \$50,

000, and you insured her under a Marine policy for \$25,000 on the hull and machinery valued \$50,000, and you have a loss of \$25,000 by fire, all that you can recover from your underwriters is \$12,500, but if under similar circumstances you had a fire policy for \$25,000 you could recover the full amount of your loss—the reason being that a marine policy covers the vessel itself and if an assured does not cover the full value of the interest he becomes a co-insurer, whereas a fire policy covers a certain specified figure up to the amount of which the assured is entitled to collect any damage which he can prove.

Two other points occur to me which are worthy of mention.

First, the question of seaworthiness of a vessel. If goods are shipped on board a vessel and are lost or damaged, owing to her unseaworthiness, the underwriter is absolved from all liability even though the assured is not responsible in any way for the condition of the vessel. To provide for such a contingency, a clause is often inserted in policies whereby the underwriter admits the seaworthiness of the vessel as between the assured and himself, and it is a wise precaution for any owner of cargo to see that his policy contains such a clause.

Secondly, what is known in "Marine" Insurance as the "Doctrine of the Proximate Cause," which means that in order to make an underwriter liable, it must be shown that the damage claimed for is the direct and not the remote result of a peril insured against. A concrete example will best show the operation of this principle. Two vessels were in collision—one of them had a cargo of oranges on board and was so badly damaged that she had to put into a port of refuge for repairs. The cargo was put into lighters, and after repairs to the vessel, re-shipped. It was found on arrival at destination that the packages were badly broken and that a large portion of the fruit was unsound and in very bad condition, which damage was attributed to the handling in the discharge, and re-shipment, and the delay in repairing the ship coupled with the perishable nature of the cargo. A claim was made for the damage as being consequent in the collision, but the Court decided that the collision was only the remote cause of the loss, the proximate cause being the delay and the extra handling and therefore the assured could not recover.

In conclusion, I would like to apologize for the many shortcomings of this paper, and to plead in extenuation that the subject of "Marine" Insurance is such a voluminous one that it is extremely difficult in a short address to pick out the salient points of interest.

Some Reasons why British Columbia Raw Salmon should be Manufactured at Home

By

F. E. BURKE, MGR. WALLACE FISHERIES, LTD., VANCOUVER

(Paper Prepared for C. F. A. Convention)

It is rather with a feeling of diffidence that I attempt to read a paper on the subject allotted to me. So much as been said locally and so much has appeared from time in the local press and trade papers, that I feel quite sure most of the men here present are rather familiar with most of the ideas that can be advanced in connection with this subject, and if to

their ears this paper sounds rather familiar, I trust they will over-look it, as most subjects that are important are as a rule familiar to the people interested in that particular line of reasoning.

Generally speaking; one of the lessons that this war has brought home and especially to the younger nations, such as Canada, that are burdened with a

heavy war debt the same as the older developed countries, is that the source of revenue to liquidate this war debt must come from the development and manufacture of its natural resources. The younger countries as a rule, develop rapidly as good emigration comes into them. This emigration must be kept well and profitably employed to enable it to progress and develop, and the satisfaction of the people employed in it will only come from an abundant supply of all the comforts of life, produced at a low cost, and this low cost can only come with a large volume of production. A large volume of production means a large capital investment, which in a new country is only invested when investors were assured that the raw material which they use, will be protected to assure them a permanent business. Those of us in British Columbia who are interested, either through investment or through the management of the larger salmon companies, have viewed with great alarm the depletion of its natural resources of Chum Salmon, through the export of these fish in a raw state. There is apparently considerable to be said against this export of raw salmon, but the writer feels that the theories advanced against an embargo on this class of goods are more visionary than actual. At the present time, speaking approximately, there are 500,000 cases more Chum Salmon manufactured by the American packers than their country consumes, and this surplus is exported largely to countries where the goods come into competition with the B.C. product of this grade. Investigations of statistical reports will show that for the last two or three years one third to one half of this surplus production in the United States has been put up with the raw product imported from this Province. The Province, as a source of revenue from the export of this raw product only obtained the licence fees paid by the fishermen, and which is only comparatively a very small amount. Take for example the salmon exported from district No. 1 during the season of 1919 which amounted to 88,380 cwts, or figuring ten fish to the case, approximately 110,000 cases canned salmon. On this salmon the province lost the Provincial Tax of 4 cents per case, and the Dominion lost its Tax of 4 cents per case, and estimating the wages of the labor employed in the Cannery at 80 cents per case, there was a loss of actual money that would have been paid out in this province and put into circulation of \$88,800.00. There was also lost, the amount that would have been expended for finding the Cannery employees, the loss of labor in the cannery, in making the boxes, the loss of labor used in the production of the miscellaneous supplies and repair work that is necessary around the cannery, and the loss of labor arising out of the cost of loading and handling in the transportation of the packs from the Canneries to Vancouver. Taking the total of the above enumerated figures as estimated by a practical man in the business here in Vancouver, it shows that the loss on this 110,000 cases through labor and taxes to the people in this province on this lot of fish exported from No. 1 District was approximately \$160,000. These figures do not take into consideration any profits that might accrue from the manufacture of this product in this country, or the money that would be distributed locally for the purchase of supplies and other materials used in connection with canning operations. I think it naturally follows that if the residents of B.C. were operating these canneries here, they

would want to keep any profits that might accrue at home.

It must also be taken into consideration, the market for 98 per cent of this grade of goods is export, and it means the bringing into this province of actually new money arising from exploitation of this natural resource, and to the writer's mind this is the most preferable manner of realizing on your natural resources, viz.: through export and not through domestic consumption, which latter means to use a familiar expression, only the "Swapping of Jack Knives" by taking money from the domestic consumer and putting it in the pocket of the domestic manufacturer.

One of the common arguments advanced against the embargo on salmon is the fact that the foreign buyer as a rule, pays a very much higher price for the raw product than the local man does. Allowing that the foreign buyer pays the fishermen 10 cents per fish more than the Canadian buyers offers, figuring on an average of 10 fish to the case would mean that the fishermen would receive \$110,000.00 more by selling his fish for export. From this we will see that the province and the people of the province would have benefited approximately \$50,000 more had this fish been manufactured at home rather than exported even though the fishermen had received less.

The whole principle of our Government is based on "The greatest good to the greatest number of people," and we know a greater number of the people would benefit by having these goods manufactured at home, rather than exported in the raw state. Again scientific investigation shows that fish when canned are always a better quality when canned as close to the point of capture as possible, therefore, these fish would be a much better article of food if they were put up as soon as possible after being taken out of the water, rather than after transporting them a long distance, which necessarily follows when the fish are carried away to the States to be manufactured. Even though this fish which is exported is packed as American fish and put under the American canners own label, which is not always the case, we think that Canada and the Canadian Brand would benefit in the export markets through comparison of the quality of the fish when packed at home. Again if there was an embargo on the Export of Chum salmon it would have the effect of eliminating the surplus production in the U.S. as it is claimed that the U.S. waters have been exploited almost to the limit in the manufacture of Chums and that the surplus production of Chums has come from the importation from the Canadian side. If this is the case it means that instead of being the under dog in the Export markets where the surplus of the U.S. canners is disposed of, and of having to take for our goods whatever prices the American canners make, we would be in a position to dominate the export markets, and it might be that if the domestic market in the U.S. on this grade of fish increases, as the writer believes it will, that regardless of the tariff that exists against the Canadian manufacturer, we might be able to market our product in the U.S.

We hear the theory advanced that we should be able to pay the same price as the American buyer. This is incorrect at present. The American canner has a considerable advantage over the Canadian buyer. First, through the average production per cannery in the U.S. and Alaska which is virtually three times as great per cannery of ours with identically the

same overhead. The surplus fish that he gets from the Canadian side simply gives him his maximum output, and the maximum output as compared with the minimum output, or anything under the maximum, is a large factor, as those of us in the fishing business are aware of.

Allow that a Canadian canner is not able to absorb all the fish for a year or two, as it is claimed by the fishermen would be the case, granting that this is true, we think that it would only be a very short while before, through dominating the export market, there would be such keen competition for these fish that the local fishermen would be obtaining just as much for them, as if they were selling them to the export buyer. We think the position of the Sockeye salmon fully bears this out, there being an export duty on Sockeye salmon.

Again, to the writer's mind this is one of the most important points, the export of these fish in the raw state means a tremendous drain upon the fish themselves. The home canner of course tries to get all the fish that he can at a price that will enable him to compete in export markets. The fishermen fishes in every manner possible to get as large a catch as possible to sell to the export buyer; the result is that the fish are subject to a tremendous pressure and hundreds of fish are taken and sold when their value as a manufactured product is so infinitesimal as compared with their value as a source of propagation, that it is almost a crime to take them. Any prosperity that we

can have arising from a big output from the packing of these fish is only temporary, if this is done at the expense of future propagation. While we may employ people in the manufacture of these fish, at the same time it means that when the fish are depleted the labor employed in these plants must go to some other country to earn its livelihood. We must not overlook the fact that we have no right to deplete the natural resources of this country at the expense of the future generations. The burden of taxation may be as heavy in the future through some unforeseen cause, as it is at present; even though the present debt is liquidated. The industry is one that will last an indefinite length of time if it is properly protected. The Government can exercise very rigid jurisdiction and powers of legislation over a natural resource industry where the product is manufactured at home, and we think that not only in the long run would the fishermen benefit, but we know that the Dominion of Canada and the Province of British Columbia as far as taxable sources of income are concerned would benefit enormously, and we know that the people who are to come and to be employed at the canneries would benefit, as they would have a stabilized industry that would insure steady employment.

No action of the Government will ever suit all of its citizens and we think the Government should take this point into consideration and place an embargo, as the greatest number of people would be benefitted, and we do not think that the present state of affairs benefits the greatest number of people interested.

West Coast Deep Sea Fishery Research

By Prof. Arthur Willey, Dept. of Zoology, McGill University.

(Paper Prepared for C. F. A. Convention).

The remarks herewith submitted to the Canadian Fisheries Association on the occasion of their Annual Convention held at Vancouver, 1920, refer to the outside waters of British Columbia, and do not encroach upon the area covered by the excellently conducted operations of the Biological Station at Departure Bay, near Nanaimo.

After the salmon, the halibut is the most valuable food-fish on the west coast. In the North Sea and North Atlantic generally, it does not occupy such a leading position, and its name does not appear amongst the ten principal food-fishes of the North Sea. The official list of the "Big Ten" contains the names of the mackerel, cod, haddock, whiting, turbot, plaice, common dab, sole, herring and anchovy. Of these it may be said that the plaice is to the British Isles what the halibut is to British Columbia.

In the North Sea the European halibut has proved to be one of the least amenable of food-fishes for international investigation, because of its inaccessibility in the comparatively great depth at which it lives, fifty to one hundred and fifty fathoms. The greatest success has been achieved by the Danish Commission. Persistent fishing of the banks inhabited by gregarious flatfishes tends to decrease their average size without appreciably diminishing their total numbers. It would appear that their instinct teaches them to leave banks which have proved disastrous to them,

somewhat as Atlantic salmon forsake certain rivers.

The conservation of deep sea flatfishes can be effectively furthered by voluntary limitation of the fishing fleet and fishing season. This necessarily interferes with the trade and is a common-sense administrative measure with which science has no direct concern except in the advisory capacity. The question naturally arises:—What can science do for such an industry? It cannot re-stock deserted banks by direct action. Several rapid surveys of the fishing grounds have been instituted by the United States and Canada, and due acknowledgement should be made here of the series of reports on age, size, distribution and frequency of halibut, by Mr. W. F. Thompson, issued from the Provincial Fisheries Department, Victoria, B. C. But besides this work, meritorious as it is, science can investigate conditions of life on the sea-floor, and the distribution of the spawn. From the behaviour of other members of the flatfish family, it is believed that the eggs of the halibut are floating eggs, and as the ovarian eggs are of relatively large size at maturity (about 3.7 mm. in diameter) and the spawn has not been found anywhere in the open sea, there is reason to suppose that they may be afloat in deep water. After hatching, the young are scattered in countless millions far and wide in the sea adjacent to the fishing banks; and yet only twenty examples of the pelagic fry (13.5 to 34 mm. long) have been taken in

the young fish trawl, west of the Faroe Island and the coast of Iceland (south and west) by the Danish Fisheries Research steamer "Thor" in 1904.

An investigation of this kind resolves itself into an exploration of the fishing grounds with the ordinary tackle of the marine biologist, and the tabulation of results. This necessitates a ship and an expensive equipment. The outcome would be to establish a body of facts, to add to the prestige of Canadian science, and to give publicity to a Canadian maritime industry. It may be mentioned that the northern countries of Europe have thought it worth while to accumulate a mass of data relating to the fisheries, and have found means of putting some of these data to immediate practical use. The same statement applies to the Australian Commonwealth and to the South African Union.

Another question that arises is this:—Has the time arrived when Canada could usefully undertake such an enterprise as the investigation of her western seaboard on oceanographical lines? To settle this point it would be necessary to collect and sift the opinions of all the fishery authorities of the world. This would have the effect of delaying action, and perhaps Canadian opinion would suffice. The matter could probably be brought to an issue if the Biological Board of Canada had the backing of the Canadian Fisheries Association. The former would care for the scientific end, and the latter would profit by the publicity.

The halibut, secure in the calm depths of the sea, spawns during the winter months, when the surface waters are at times lashed into fury by southerly and westerly gales. This doubles the difficulty of locating the spawning areas. Apart from practical measures of protection, the best that science can do is to attempt to discover the laws governing the dissemination of halibut spawn and fry. The economic oceanography of the west coast is thus reduced to the science of fish spawn. In carrying out this work, a multitude of other objects associated with the feeding habits of the halibut would be brought to the surface. Many of these would have only an indirect bearing upon the main problem, but they should all be identified and evaluated. Nothing should be rejected, because every species has some value, if only as an indicator; and it would be the part of the expedition to deal with species in their interrelations rather than as independent units.

This, in brief, is the statement of the case as it presents itself to the writer, and it should not be difficult for the Vancouver Convention to pass judgment upon it. Suffice it to add that what is already known of the West Coast gives abundant promise of a rich harvest of fruits of the sea, some of which might prove to have a market value, and all of which would contribute to the picture of life on the continental shelf which stretches out in places to about forty miles from the shore before it plunges into the abyss. Not less than three years should be assigned to the operations at sea.

A possible way of getting at the facts without commissioning a Government vessel may be suggested. If every fishing owner would undertake to make a number of hauls with different appliances, at different determined positions and depths, and at different times of the year, instructions could be given regarding the handling of the gear and the disposal of the material obtained. It does not matter whether a vessel makes one haul or several hauls during the year so long as all the required data are faithfully

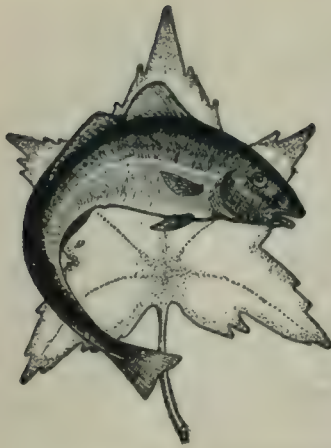
recorded each time, and forwarded to head-quarters, with the catch properly preserved according to directions. Each vessel would receive credit for its contribution, and this might be the means of arousing interest in the venture. Perhaps the suggestion savors a little of idealism, and it may not be feasible, but if attempted it would be a combination of voluntary effort and Government control. Fortunate hauls with long line, beam trawl, dredge or trowel, might throw light upon the habits of many other edible fishes on the West Coast, even upon the sea life of the salmon. Scientific results are certain; and it would be reasonable to hope for discoveries of practical utility.

It may be useful to append here the concluding sentences in the writer's report upon the collection of marine Copepoda (microscopic crustaceans) made by the Canadian Arctic Expedition (1913-1918), now in the press:—

The material obtained by the Canadian Arctic Expedition constitutes an imperfect index to the wealth of elemental life in the northern waters of Canada. The Copepods, as a class, provide fish food for food-fish. There is an inexhaustible supply of this fish food in the Arctic Ocean, where it filters down into the northern seas, where commercial fisheries are carried on. By tracing out the southern extension of arctic and sub-arctic forms, a great deal has been accomplished in giving precision to problems which await solution in the north Atlantic. Similar exploratory and experimental work is required for the north Pacific. In this way materials would be forthcoming which would enable the age-composition of the different colonies of organisms on the sea-floor to be made out. Equipped with such data we should be able to foretell the probable incidence of lean years in the fisheries. With this information at their disposal the capitalist corporations would be able to curb their tonnage so as to maintain an economic equilibrium between the market and the deep sea. This is what biological work can do for the deep sea and other fishery interests. Leaving out of consideration the salmon family and some other anadromous fishes, science cannot effectively replenish the stock of fishes in the sea, but it can claim to predict the periodicity of fluctuations when the necessary data have been accumulated after many years.

No epidemics effect the plankton (i.e. the primary food supply of the sea), but we know that the higher animals are liable to various disorders and derangements whereby their numbers are reduced. The presence of an abundant food supply does not unfailingly attract a multitude of feeders, and this fact, well-known to marine biologists and other naturalists, but not so well known to those who have had no actual experience in the matter of the interdependence of organisms, indicates that while there is no limit to the supply of primary food-stuffs in the sea, there are limits, in some cases very narrow, in others very wide, but always very definite, to the valuable species which subsist directly or indirectly upon this food.

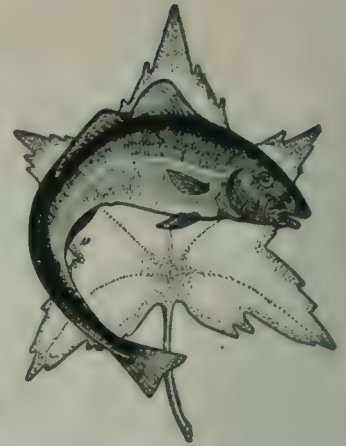
Whilst investigating the distribution and periodicity of the food-organisms, the biologist is brought into contact with the feeders, and though his methods of extracting secrets from the sea may be slow, yet they are sure. Not sensational discoveries, but dogged perseverance, such as that exhibited to good purpose by the members of the Canadian Arctic Expedition, should be encouraged with a free hand, for the glory of Canadian science and the protection of Canadian maritime industry.



The Fourth Convention Banquet

Fisheries Congress closes with an excellent
menu of tasteful fare, thoughtful
speeches, and East and
West united

"In all the world no fisheries like these!"



The Fourth General Convention of the Canadian Fisheries Association closed with a Banquet and Ball fully in keeping with the high standard of the three days' proceedings. One hundred and fifty members and guests sat down to an excellently served dinner in the Banquet Hall of the Hotel Vancouver with President-elect A. L. Hager acting in the dual capacity of Chairman and Toastmaster.

Seated with Mr. Hager at the head table were Past President A. H. Brittain, First Vice President J. A. Paulhus, Third Vice President F. E. Burke, National Secretary F. W. Wallace, Lt. Col. L. W. Gill, Director of Technical Education for Canada, United States Consul-General Fredk. H. Ryder, Prof. John N. Cobb, Dean of the College of Fisheries, Seattle, Dean Clements of the University of British Columbia, E. W. Hamber, President, B. C. Mills, Timber and Trading Co., and J. J. Harpell, Director C. F. A. and Chairman of Publicity Committee. Seated at the other tables were men who are ranked as leaders in the fishing industries of the Pacific Coast on both sides of the line and as one guest remarked "never in the history of the Pacific Coast fisheries have so many of the heads of the industry been gathered together." Salmon canners, bankers, fresh fish men, scientists, Government officers and delegates from the Middle West and the East discussed the menu and fishery topics until the coffee and cigars appeared and Mr. Hager arose to propose the toast of the King.

When the time-honored health had been discharged, the new President commenced his functions as Toastmaster and began:—

"I feel that I owe this intelligent gathering an apology for being in the Toastmaster's chair tonight, but by way of explanation I may say that our silver tongued Chief Magistrate, Mayor Gale, was elected for this arduous task but at the eleventh hour it was impossible for him to be present. Our Secretary, who is always on deck to find jobs for the executive, slated me for the position of Toastmaster and from my seat of fancied security I have been thrust, much against my will, into this new position of presiding at an important convention banquet. I have confidence in myself to the extent that I will make a bad fist of the job but I am going to accept the ruling of my boss and have just as good a time tonight as anybody.

The next toast on our list is practically the key-note of this gathering—"The Unity of East and West." This is the first time in the history of the commercial fisheries of Canada that the interests of East and West

have foregathered to discuss the problems incidental to our fisheries. I know of no better man to reply to this toast than Mr. A. H. Brittain. He is one of the progressive fish men of the Atlantic Coast; he has been our President in War and Peace for twenty-two strenuous months; he is a charter member of this association and a man of broad vision and high ideals; he has given ungrudgingly of his time to the impartial considerations of the problems of both East and West. Nothing I can say can add to the laurels gained by Mr. Brittain in the administration of the Association.

Gentlemen; I will ask you to charge your glasses and drink to the health and prosperity of Mr. Brittain!"

When the applause and singing of "For he's a jolly good fellow" died away, Mr. Brittain, still wearing the golden chain of office, replied to the toast of "East and West" as follows:—

MR. BRITTAIN'S VALEDICTORY SPEECH

"Gentlemen, I can assure you I feel highly honored at this present moment and the remarks of the Toast Master have left me that I hardly know what to say. I see that I am down on the programme to reply to the toast of 'East and West'. There is so much to be said in connection with 'East and West' that one hardly knows how to start or forecast where he will finish.

A well-known poem of Rudyard Kipling's contains the phrase:—'East is East and West is West, and never the twain shall meet!' It is quite a famous phrase and is often quoted to illustrate the supposed impossibility of uniting the Occident and the Orient. When I review the progress of this Convention and think of how East and West have got together and discussed the many problems affecting our fishing industry, I am constrained to believe that Kipling is wrong and that his phrase is a misnomer as far as our East and West is concerned.

But I am a strong believer in another saying that 'the wise men come from the East' (laughter). I do not wish you Westerners to think that this is meant as a reflection upon your intelligence, but rather I mean it as a compliment for the wonderful Convention you have staged for our Association. It is because of our faith in the good time we should have in the West that we Easterners made the long journey to the Coast. In doing so, I feel that we showed considerable wisdom and are entitled to be listed among the 'wise ones'. (applause.)

We have come, we Easterners, to meet you and talk with you on matters of mutual interest in the development of our great fishery resources. We have realized that our Industry to be great must work together in the closest harmony. We realize that the day of playing a lone hand is past, and that East and West must meet and co-operate in doing the things we want to see done. In these days of co-operative effort in almost all lines of industry, we cannot afford to act as unorganized individuals. Our Association has only been in existence for five years, but during that time it has accomplished much for both East and West, and its work has been such that it is respected and looked upon by others as a safe and sane organization.

Having that reputation and a record of good work behind it, it remains for the members to realize that we are the Association which represents their business and they should take as much interest in Association activities as they do in their own business activities, for effort in the one brings results in the other. Our Association is a good Association. (Hear,hear!) We have able men in it who know the Industry, and recommendations from us are worthy of consideration. Those engaged in our particular industry who are not members may as well realize that the longer they stay out, they more they are slipping behind. The day is fast coming when the voice of Industrial organizations will be recognized and accepted as the voice of the elements and industries and interests they represent.

It is a very great pleasure for me as an Easterner to disprove that phrase about East and West when I now formally hand over the chain of office of the Presidency of the Canadian Fisheries Association to Mr. A. L. Hager of Vancouver. (Loud Applause). The fact of our presidencies travelling from Halifax to Vancouver in the course of a few years proves that we are an organization to which distance is no object. The only office in our Association that appears to be immovable is that of the Secretary. We need him in Montreal as far away from the new President as possible (laughter).

To Mr. Hager then I pass over my sincerest good wishes and those of every member of the Association. I feel that in Mr. Hager we have a popular choice. He is an outstanding figure in our Industry and one of the best heads in it. He is well known and is very popular with we easterners and we should like to see more of him—in a personal way, at any rate. Mr. Hager is taking over the Presidency of the Canadian Fisheries Association at the beginning of a new era. He is our first Peace-Time President and our first Pacific Coast President. On his behalf I would ask you to support Mr. Hager in every possible way and when he calls a meeting you should attend and give him the benefit of your advice in order that he may be relieved of the onerous task of trying to interpret the desires and wishes of our industry which many heads of associations sometimes have to do.

He will have to speak after me and I know we are going to listen to an intellectual treat. (laughter). I know what a lot of time he has given to that speech. I went to his home a few nights ago but could only see him for a few moments as he was busy writing his speech. (laughter). Gentlemen, it ill behoves me to take up any more of your attention because I know we have yet to hear from our model speaker." The applause and cheers which greeted the conclusion of Mr. Brittain's remarks burst forth again when Presi-

dent Hager, with the regalia of the Presidential office over his shoulders, arose to reply to the toast of "Our Canadian Fisheries." There could be no doubt of the popularity of the Association's presidential choice when they selected "Al" Hager for chief executive.

PRESIDENT HAGER'S INAUGURAL ADDRESS

"Gentlemen," he began; "This will be my maiden speech. The day Mr. Brittain arrived I was informed that I was to respond to a toast at the Banquet; and since that time I haven't had very much time either to write or memorize what I would have to say.

Like Mr. Brittain, we of the West have heard the saying that the wise men come from the East. We of the West have always believed that the wiser they are the quicker they come. (applause). Our worthy past president has made reference to me as being a model speaker. He is right; for Webster has defined a model as being a small imitation of the real thing. (applause).

There is an old saying that some persons acquire honors and others have honors thrust upon them. My natural modesty leads me into the belief that I am one of those who have honors thrust upon them.

I am, however, fully sensible of the honor the Canadian Fisheries Association has conferred upon me by electing me their President, and I must also thank my good friend from the East, Mr. A. H. Brittain, for the very generous remarks accorded to myself. In electing me your President, I am content to believe that this is intended, not so much as a personal compliment, but rather the desire of the members of our Canada-wide organization to have a Western member as their Chief Executive, for a term, and I feel sure our Western members share my appreciation of the honor.

I agree with Mr. Brittain that Mr. Kipling can be proved wrong when he talks about the impossibility of uniting East and West, as far as we are concerned. In our Association we have shown that it is possible for East and West to unite for the common good of our particular industry, and our clear duty for the future is to cement that unity until there "Shall be neither East nor West"

Border, nor breed, nor birth" when it comes to doing things to develop our Canadian Fisheries.

This brings me to the subject of our Toast. There are a number of our very good friends from South of the border with us here and I am going to tell them that we in Canada have the greatest fishery resources in the World.

The greatest fishing areas of the World are four in number and all are in the Northern Hemisphere. The first great area is the West Coast of Europe including Iceland and the North Sea; the second is the Grand Banks and the Western Atlantic north of the 40th Parallel of latitude; the third is the Pacific Coast of America from Cape Flattery to the Behring Sea, and the fourth is around Japan and Eastern Siberia. You will note that two of these great fishing areas are adjacent to Canadian Atlantic and Pacific Coasts which gives us territorial and adjacent fishing grounds greater than any other Nation. In addition to that we possess 220,000 square miles of fresh water lakes and rivers well stocked with many varieties of fish.

In developing our great heritage, we have been asleep at the throttle. We haven't really awakened to what we have. We have allowed the other fellow to get ahead of us in a good many ways and when the Canadian Fisheries Association was formed in 1915, it was first evidence of our awakening.

I can well recall a little crowd of men from the East—I can truly call them "Wise Men," in the light of later events—started this Association and invited me to join them. I knew, when conservative Easterners like Alf Brittain, Harry Short, Dan Byrne, Mr. Paulhus, Fred Wallace, Jim Harpell and others were willing to back it up, that there was merit to the proposition. I joined up too, at that time, with them and am happy to count myself as one of the old "Originals," and I feel that we are now on the high road to developing those wonderful fisheries of ours and making Canada the World's greatest fish producer. We are a small country in numbers, but we have lots of nerve and plenty of optimism.

"OUR VIEWPOINT HAS BEEN TOO NARROW"

The big trouble with a lot of us in the Canadian Fishing Industry, and I am no better than the others, is that our viewpoint has been too narrow. We have suffered from an ingrowing outlook. We cannot see anything beyond our own little spheres of effort. In the East, it has been "too much East," in the West, it has been "too much West." We have never trained ourselves to think in broad terms for the development of our fisheries as a whole. Our conservatism and narrow mindedness has been the prime reason for our non-progression in making Canada the World's big fish producer. We are, however, gradually seeing the error of our ways, and the Canadian Fisheries Association is the organization which is producing the change and affording us the proper medium for development and expansion and carrying out of our ideals.

If anyone had told me five or six years ago that we would have a convention such as this, I would not have believed it possible. Here, during the past few days, we have had fishing interests, formerly as wide apart as the Poles, conferring together and advocating policies of progress and development in each others line of effort. Who ever imagined that the Salmon Canner of the West would take an interest in the development of the East and vice-versa? Or that the fresh fish producer of the Pacific would co-operate with his business competitor of the Atlantic.

It was unbelievable a few years ago, but apparently a great change for the better has occurred in our mental attitude and we have entered upon a new era of good sense and a proper conception of our duty to the great industry of which we are a part.

According to a tradition the Grand Banks of Newfoundland were being fished before Columbus discovered the West Indies in the year 1492; and Samuel Adams Drake, Historian, tells us that there were 150 vessels from England and France fishing off the Coasts of Nova Scotia and Newfoundland, when the Pilgrims landed at Plymouth, Mass., in the year 1620. For several centuries, therefore, our fisheries have been fished commercially and while it is true we still have enormous resources practically untouched it is nevertheless true that certain areas have been over-

developed and the supply of certain varieties, notably Halibut, Sturgeon, Sockeye Salmon, Shad and Oysters, badly depleted.

Our problems and difficulties are as diversified as they are numerous but this is not the time or place to bring them to your attention.

Our Association has made an enviable record during the few short years of its existence. It is a power for good and is the medium through which our members should speak.

Let us give praise to our Provincial and Federal Fishery Officials when it is due to them and let us substitute constructive criticism for fault finding.

That the "Entente Cordiale" that has for so many years existed between the American and Canadian fish producers, manufacturers and distributors, be continued indefinitely, is the wish, I am sure, of every member of our Association.

"Our Canadian Fisheries" is a subject to which I cannot do adequate justice. I am a plain business man and not a silver tongued orator or gifted with the inspiration necessary to picture the romantic history, strenuous effort, hazard and gamble, of our industry, or its wonderful potentialities. But, I firmly believe we are entering upon an era of progress and development. We have these resources and we are going to develop them as they should be developed. Enthusiastically and sanely—along most modern lines and according to the canons of high business integrity—and the Association is out to aid the effort. Our slogan shall be—"In all the World no fisheries like these"—and East will unite with West to make our laudable boasting good." (Loud and continued applause).

At the conclusion of his address, President Hager called upon Vice-President J. A. Paulhus of Montreal to say a few words.

MR. PAULHUS INVITES THE ASSOCIATION TO MONTREAL

"Mr. President and Gentlemen," said Mr. Paulhus. "I am speaking under difficulties tonight. I am a Frenchman and I must speak in English. Yet I am as proud to be able to speak English as I am to be French. When I left Montreal I was booked to read a paper at the Convention, but I thought I would have time enough in Vancouver to prepare my paper. As things turned out, I found myself in the same position as Mr. Hager. I have to speak without a paper because I have had no time to prepare it. I don't even get time to sleep. I have been on the go ever since I arrived here—more than I ever did in my life before.

I am animated by two feelings just now. I have to express regret at seeing our late President go out of office and to congratulate the new President coming into office. I have known our late President for many years and he is a man who has certainly worked earnestly, seriously and devotedly for the interests of this Association. As regards our new President, Mr. Hager, of course, we do not know what he will do. But by the way he has handled this Convention I am sure we can expect from him marvellous things. I am expressing tonight my own personal sentiments and I believe everyone from the East will agree with me that we have had here the time of our lives.

Now as I am honest enough to believe that the next convention will be at Montreal, I want to say right here that it will perhaps be impossible for us to entertain you in the way you have entertained us, but we will do our very best. Montreal, as you know, is a large city. I do not want to disguise the fact that Vancouver too is a large city, and as I understand one of your members to say, it will not be many years before it is as large as Montreal. I am not so narrow minded as to harbor any resentment. But we have certain features in Montreal that will be quite interesting, of course. We haven't such high mountains as you have here, but we have a Mount Royal. I also want to say, speaking in a popular sense, that Montreal is not a dry city in any event. I know that we have down there the necessary to make the convention a success; but we have nice ladies in Montreal too. (Laughter). It will be interesting to a few of you to learn a few French phrases, which will help you immensely. I am quite pleased to note how East and West are working together. I remember a few years ago I was in New York and I was walking along Broadway, and the lights were quite dazzling. I saw a sign which read "East is West," and those words struck me very much. I couldn't make out why east could be west. I forgot all about it until I travelled 2,800 miles to find out that it is possible for east to be west; and I got the idea tonight that east is west in sympathy, and west is east with regard to the interests of the association.

Your Provincial Minister of Fisheries stated yesterday that the western problems were not the eastern problems. Well, I will agree with him to a certain extent, but with regard to the fishing interests I believe that east is west and west is east. That every part of the Dominion of Canada is interested in our fisheries, whether from the East, West, North or South. I am one of the pioneers of this Association. I was present at the first meeting where we developed the first line along which this Association should work; and ever since, I have always given it my spare time, and all the time that I could devote to it, and I want to tell you that in all my work I have always tried to put the fishing interests to the front in this country. For one reason, I have studied the natural resources of this country, and my interest has always been that our fishing industry is the most dependable and most reliable of all of our resources. I say more, that the time will come when our minerals, when our forests, when our lumber will be gone and our fishery resources will be just as good as they are today." (Applause).

The following members of the various Convention Committees were asked to stand up. Messrs Payson, Kenwyn, Phillips, Young, DeLong, Burke, Julian, Payne, Buttimer, McLean, Doyle, Gosse, Davis, Johncox, Ives, Coppin, Lipsett, Watkins, Wallace, Amiel, Bell-Irving, May and Eckman. Addressing the standing committeemen, President Hager remarked. "On behalf of the Pacific Coast members and the National Executive and the members throughout Canada as well as myself personally, I desire to thank you all most cordially and sincerely for the generous and wholehearted manner in which you have performed the work delegated to you. It has been through your untiring and unselfish efforts in both business and and entertainment that the exhaustive programme arranged has been carried out without a hitch. I will ask you gentlemen to now be seated and those who

are now sitting to charge your glasses, rise and drink to the health, happiness and prosperity of the Convention Committees!"

When the health had been drunk with cheers and singing, Mr. Hager continued. "The next toast on our list is that of "Our Guests." Here again our secretary prompts me. He hands me this slip of paper with the following message; 'Dear Hager. Do not forget that guests, like the poor, are ever with us.' (Laughter). What does he mean? Personally, I think he intends to convey the idea that guests to our conventions are always welcome and that the latch-string is always hanging out. As I am getting weary of hearing my own voice and as my stock of laudatory adjectives is almost exhausted, I am going to ask



J. S. ECKMAN, Vancouver.

Assistant Manager, Canadian Fishing Co., Ltd.
Director, C.F.A. One of the men who made the Convention a success.

my good friend Jim Harpell to propose the health of our guests."

Mr. J. J. Harpell of Montreal in a few well chosen words expressed the pleasure of the Association at having so many distinguished guests with them during the sessions and at the Banquet. Professor John N. Cobb replied on behalf of our American cousins in his usual happy vein. Mr. G. W. Nickerson replying for the Prince Rupert delegation stated in part.

"This is the first convention of the Canadian Fisheries Association I have attended. I hope it will not be the last, and I am sure it won't if my pocket book

won't prevent my getting there. I can speak for all the members when I say there is a vote of sincere thanks coming to Vancouver for the able manner they have entertained the delegates to this convention. These men are all busy and have their own affairs to attend to, and it has meant a great sacrifice to them, as we can all appreciate. Most people call Prince Rupert Northern British Columbia, but as a matter of fact, it is more nearly the centre of British Columbia. Our American friends, particularly the ones from Seattle, and some from Alaska accuse us of stealing what rightfully belongs to Seattle. We will have to admit that we are trying to get it, and whether it is stealing or not I will leave it to them to decide. Prince Rupert, situated so closely as it is to the Alaska border, and fresh fish being a commodity that must reach the east as quickly as possible is in a position not only to supply the wants of the east, but those of central British Columbia, and northern Alaska. Therefore, from an economic standpoint you can understand that there is a big saving from the time the fish is caught to the time they are landed in New York, owing to the service rendered by the Port of Prince Rupert. Up

THE PUBLICITY KING.



F. E. PAYSON, Vancouver.

Secretary Vancouver Branch, C. F. A.

until the present time we have had a great influx or a great number of the American boats coming into Prince Rupert to discharge. Unfortunately, owing to the financial difficulties of the Grand Trunk adequate car service has not been provided, which means that whereas we were having about a million pounds of fish a week landed there, probably we are now only getting 200,000. This has been a very great loss to

Canada as a whole, particularly at this time when the trade balance is against us. When you realize that you have to buy American exchange which will cost thirteen per cent today, you can readily understand what a handicap it is. We hope with the government taking over the Grand Trunk that in another year this problem will be entirely solved, and that we will be able to offer to our American fisheries the advantages to be gained by permitting them to market their fish from the port of Prince Rupert."

PRESIDENT HAGER: I will now call upon Col. Cunningham:

On behalf of the Minister of Marine and Fisheries, (Hon. Mr. Ballantyne) and the Federal Fisheries Administration, Lt.-Col. Cunningham, Chief of the Pacific Fisheries Division, replied.

"Mr. President and gentlemen: This is the first I heard that I was to say a few words, in the absence of the Honorable Mr. Ballantyne. While he is absent in the body, he is with us in spirit. It was Mr. Ballantyne's purpose and intention to have been present at the meeting of this association in Vancouver. By turning your face backward during the past two years you can appreciate from his actions that he looks upon the Province of British Columbia as the leading province of the Dominion of Canada, and anything that he can do to further the interests of the province generally and the fisheries in particular, it will be his earnest desire to do it. It is a great pleasure to me and a great pleasure to all of us to see that the west is coming into its own. The presidency of one of the most important associations of the Dominion is now in Vancouver in the person of our friend Mr. A. L. Hager. (Applause). From the business relationships that I have had with Mr. Hager during the number of years it has been my privilege to live in the province, you will find that he is a gentleman, first, last and always. Anything that comes before him as President of this Association will be dealt with on its merits and on a business basis. I am sure it must have been quite a revelation to our friends from the East to accept of his hospitality yesterday, and to have passed through the admirable plant of his company's. I do not know where you will find a plant of such size, or that is run on such a business basis. I have always found Mr. Hager fair and square in all his dealings. He is always willing that every man should have all the benefits that this world can offer. I think a vote of thanks is due to the Honorable the Minister of Marine and Fisheries for the steps he has taken in giving the fish industry recognition in the appointment of an assistant deputy. It was fortunate that the word "assistant" could not have been eliminated. Still we are all thankful for small mercies, and hope in the near future that we will have a Deputy Minister right in the department; and in the not far distant future, a separate Minister and a separate deputy who will devote his entire time to the most important industry we have—that is the Fisheries of Canada. (Applause). Whilst the head of the association has been removed from the west, we must not forget, gentlemen, that the east also has its claims on the time and consideration of the Association. It has been a wonderful step. It is not so very long ago that I can remember when we didn't hear very much of the fisheries of British Columbia in the East. It was all East. But the Easterner coming west does not take very long to become acclimatized, but it takes longer for a westerner going



ROBERT C. GOSSE, Vancouver.

Gosse-Millerd Packing Co., Ltd.

Prominent Canner who was Elected a Director, C.F.A.

east before he reaches that happy stage. Here we have summer all the year round; in the east we have the two extremes in winter and in summer. But during all of these months the fishing business is going on. So that we must not forget that the east has claims on the association as well as the west; and as our new President is fair in this connection. I am sure that this is one point that will not be overlooked.

I hope that the Honorable Mr. Ballantyne's long promised visit to British Columbia is not far distant. It has not been his fault that he has not been with us before, but it was owing to his unfortunate physical condition that he has been unable to be present with us on the coast. In Montreal he stated to me last year how sorry he was that he had been unable to keep his promise to be with us in British Columbia before. We have with us a representative of the Publicity Division in the person of Mr. Conlon. Mr. Conlon is at the head of one branch of the Department which with proper attention will be able to assist you very materially. The question of publicity and finding new markets for our fish is one of the most important parts of our industry. We have also with us Mr. Rodd, Superintendent of the Department of Fish Culture. So long as he remains at the head of that branch of the Department I do not think the west will suffer from any neglect in that connection. I thank you gentlemen for the opportunity and privilege, and I am very glad to know and feel that everybody from the east have enjoyed themselves in the west; and I am

sure when the west goes east next October they will receive a hearty reception and enjoy themselves as much as the easterners have here.'

At this juncture, the ladies, who had been having a banquet of their own at the Hotel Barron, appeared on the gallery of the Banquet hall. Mr. Hager greeted them. "Gentlemen look who we have here! The ladies! This is an unexpected pleasure! I am reminded of the story of the slave who came before the Sultan and prostrating himself said. 'Master; a lady waits without!'"

"Without what?" quoth his master. 'Without food or raiment, my lord,' answered the slave.

"Then give her food and send her in! (Prolonged laughter.

But as our ladies have both food and raiment they are doubly welcome. When I think of the ladies I am reminded of the last trip I made across the continent. While travelling east on the C.P.R. there was a persistent old Kentucky gentleman with an ever-present bottle of Bourbon whiskey who insisted upon everyone in the smoking car having a drink with him. On each and every occasion that he found a drinking partner, he proposed the following toast:—

"Here's to old Kentucky where the horses are so fast the wind is jealous!

Where the ladies are so sweet—God bless them—the angels complain!

Where the whiskey is so pure, it is holy to die drunk!"



EDWARD LIPSETT, Vancouver.

Chairman, Automobile Committee, who made Walking a Crime.

Although unable to say much in favor of the horses or the whiskey of British Columbia, yet I feel we can apply the Old Kentuckian's toast to the ladies we have with us tonight, and I will ask my friend Mr. Short, of Nova Scotia, to voice the sentiments of us all by proposing the toast to 'The Ladies.' "

Mr. H. B. Short, addressing the audience in the gallery and no doubt inspired by the presence of the ladies made a very gallant speech—a record of which was unfortunately not taken. The subject seemed to be one to which Harry was able to do justice, and he wound it up very fittingly by proposing the toast: "The ladies! Our wives and sweethearts! If they are our sweethearts—may they soon be our wives. If they

are our wives—may they always be our sweethearts!" (Applause and singing "For They Are Jolly Good Fellows.")

The President concluded his function as toastmaster by beckoning the ladies to the main floor. "Enter, ladies. On with the dance—let joy be unconfined!"

Tables were cleared away; the orchestra struck up a waltz and the floor was soon taken up by the dancing couples. When midnight came, two hundred happy people joined hands in the singing of "Auld Lang Syne," and to the old Scottish valediction, the Fourth General Convention of the Canadian Fisheries Association came to an end.

A PRESIDENTIAL POSSIBILITY



ARTHUR BOUTILIER, Halifax, N. S.

National Fish Co., Ltd.
Second Vice-President, C. F. A.

THE NEW PRESIDENT.

Alvah L. Hager, more familiarly known as "Al" Hager, is a big man, physically, mentally and in the things he has accomplished. Though an Eastern product originally, he is now essentially of the West and has absorbed the spirit of optimism and the tackling of the toughest jobs first that seems to be native to the Pacific Coast. As President of the Canadian Fisheries Association, these attributes promise much for the future progress and development of the organization and its influence in the fishing industry.

Mr. Hager first saw the light in the United States and claims descent from an old English family who settled in New England shortly after the "Mayflower" inaugurated the emigrant service between Great Britain and America. He was educated in the Middle West and concluded his scholastic years in the North-Western University, Evanston, Illinois—bringing also from that institution of learning a reputation as a star football player and a surprising knowledge of the American national game of draw poker.

He entered the fish business twenty years ago and came to Vancouver from Boston, Mass., in 1908, as president, manager and treasurer of the Canadian Fishing Company, Ltd. He has remained in Vancouver ever since, and ancestral leanings spurred him to relinquish his allegiance to the great Republic where "life, liberty and the pursuit of happiness" is no longer tolerated, and he and his family became naturalized British subjects.

We could say a great deal about Mr. Hager. He is an outstanding figure in the social and business life on the Pacific Coast and is recognized by the Canadian fishing industry as one of the remarkably able men engaged in it. In addition to his being President, General Manager and Treasurer of the Canadian Fishing Company, Ltd.—a very large concern—he is also President of the Atlin Fisheries, Ltd., Prince Rupert; Secretary of the Doty Fish Company, and Vice-President and Western Manager of the New England Fish Company. He is the pioneer of the fresh fish business on the Pacific coast, and made the first transcontinental shipments of fresh salmon from the Pacific to Boston.

His interest in the Canadian fishing industry caused him to support the idea of a national fisheries organization and when the Canadian Fisheries Association was formed in 1915, Mr. Hager was a charter member and on the Executive Council. Following that, he was third, second and first vice-president in turn, and now steps into the highest post in the organization at a time when it is recognized as the greatest power in the industry for the development of the Dominion's vast fishery resources.

He owns up to three hobbies—his business, his family, and his garden. In all of these he is animated by the desire to have the largest and the best. Without dilating on the business, we must admit that his family of nine—four pretty girls and five sturdy boys—would be hard to beat anywhere, while the grounds around his home on Shaughnessy Heights, Vancouver, would delight the heart of a horticulturist. When "Al" is not figuring out the price of next season's halibut, he is planning the securing of some exotic plant or shrub which will fill the amateur gardeners of the Heights with chagrin and envy. He is also the proud possessor of an ancient volume of "Jestes,"

published in 1590, and delights in retailing to his friends, or visitors to Vancouver, the antique quips and riddles found therein.

The new President is a Shriner, a member of the Vancouver and Terminal City Clubs, a motorist, a golfer and a Methodist—which last, being an heirloom from Puritanical forebears, should not be held against him. He is a clear thinker and a good speaker and has progressive ideas. Best of all, he is a good sport and a Prince of Good Fellows.

A TRIBUTE.

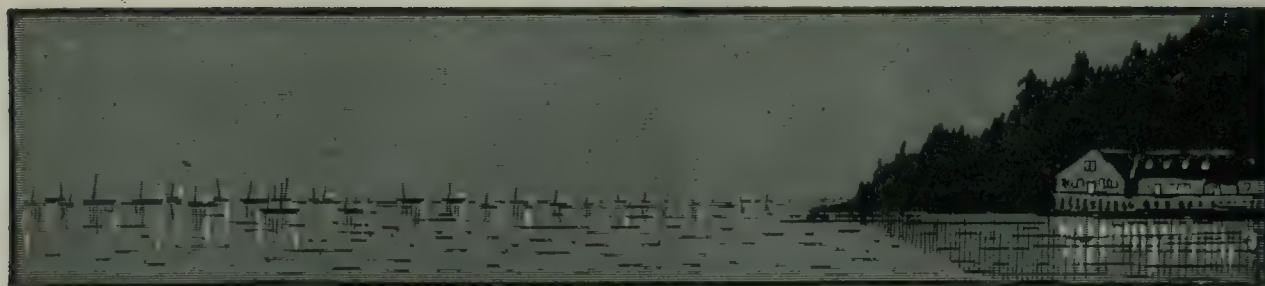
The "Pacific Fisherman"—a leading American fisheries magazine—makes the following editorial comment in its June issue:—

A PROGRESSIVE ORGANIZATION.

Canada is to be congratulated on having the welfare of her fisheries looked after by as progressive and energetic an organization as the Canadian Fisheries Association, as exemplified at the recent convention in Vancouver, B.C. Both in the subjects discussed and in the general attitude of the members present, there was manifested a desire to get away from considerations of narrow self-interest, whether of section or of vocation, and to seek in a broad way the advancement of the industry the fisheries as a national asset.

The association appears to combine in an ideal way the activities of commercial fishery operators, scientific investigators and fish culturists, all meeting on common ground and co-operating for the common welfare. A striking fact in connection with the association is the strong initiative taken by the commercial interests in a work of this kind; yet while such interests evidently predominate, scientists and fish culturists are welcomed in their councils, and discussions on all phases of the subject are given serious attention. Investigators and government officials and employes, on their part, manifest a sincere desire to comprehend the viewpoint of those engaged in the business, and to direct their efforts into lines of practical helpfulness. With the men interested in the various departments of her fisheries co-operating in this broad spirit for the development of these resources along enduring lines, Canada's confidence in the great future before her fisheries is not to be wondered at; and she is setting an example well worthy of emulation on this side of the line.

Speaking of Ice Men, that man Amiel was the ideal Manager for "Maggie's Room" (Don't say it out loud but there really was no Maggie mixed up in it) and after all his hard and laborious work during the convention, he finished up at the banquet with a first class imitation of a hula-hula dance, much to the delight of all the diners. We'll say Amey was some assistance to the success of the convention.



The Delegation to Prince Rupert

Northern British Columbia Fishing Port Stages Miniature Convention

Vice-President J. A. Paulhus, Director J. T. O'Connor, and National Secretary F. W. Wallace, all of Montreal, J. H. Conlon, Chief of the Publicity and Transportation Division, Fisheries Department, Ottawa, composed a delegation of the Canadian Fisheries Association to visit Prince Rupert. Mrs. J. A. Paulhus, Mrs. F. W. Wallace, and Mrs. L. E. Waters accompanied the delegates, who were escorted up the Coast by Alderman Dybhavn of Prince Rupert—a delegate to the Vancouver Convention.

The party sailed on the evening of June 7th on board the Grand Trunk Pacific Steamship "Prince Rupert," and after a very pleasant voyage up the inland seas, arrived in Prince Rupert on Wednesday morning. A reception committee composed of Mayor McClymont of Prince Rupert, S. E. Parker, President of the Board of Trade, J. D. McAuley of the Grand Trunk, T. H. Johnson, Director of the Canadian Fisheries Association, J. Nicholls, F. Strang and many others, met the delegates at the dock and accorded them a very hearty welcome.

Visit to Canadian Fish and Cold Storage Plant

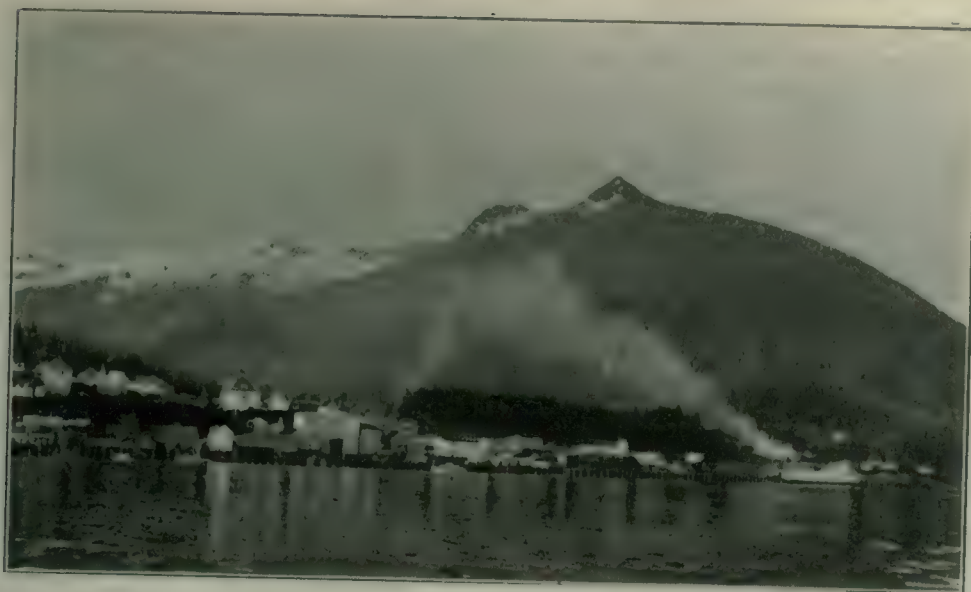
After lunch, the delegates and ladies were driven out to the plant of the Canadian Fish & Cold Storage Company, Ltd.—another mammoth Pacific Coast fishing establishment and said to be the largest fishery cold storage in the world. Inspection of this wonderful steel and concrete seven-storey building took up most of the afternoon and was an eye-opener to the eastern delegates who marvelled at the vastness of the operations engaged in and the scale upon which everything was done. From packing floor to glazing room, smoke house to cold storage chambers, the delegates toured with Mr. Johnson as guide, and the man from Ottawa was wondering if they had anything more of the gigantic in the fish line tucked away on this coast of surprises.

Entertained at Banquet

The delegates who left Vancouver for Prince Rupert looked forward to a rest from the strenuous activities of the Convention City, but it was not to be. Prince Rupert is a *shade smaller* city than Vancouver, but



Plant and Fleet, Canadian Fish and Cold Storage Co., Ltd., Prince Rupert, B. C.



Prince Rupert, B. C. View
from the Harbor.

Typical B. C. Coast Sal-
mon Cannery. Clean out-
side and——



Spotless
Inside.

the Rupertonians are not any smaller in the dispensation of hospitality. It is a disease on the Pacific Coast. The delegation expected to be *marooned* in Rupert for three days until the train went east, but three days never passed quicker nor more pleasantly. The evening of Wednesday saw the delegates the honored guests at a banquet tendered them by the Canadian Fish & Cold Storage Co., Ltd. The nicest people in Prince Rupert were present and if the climate is at times somewhat damp, there is nothing dampening in the spirits of its citizens, nor in their efforts to make one feel perfectly at home.

Though prepared at very short notice, the dinner



T. H. JOHNSON, Prince Rupert.

Manager, Can. Fish & Cold Storage Co., Ltd.
Director, C. F. A. Chairman, Prince Rupert Branch.

was all that could be desired—menu cards, menu, table and music. There was fish on the menu, but there were other things as well—oxtail soup, chicken, roast mutton—by way of variants. It was a very happy party—some fifty ladies and gentlemen—and congeniality reigned. Mr. F. Perry, President of the Company, presided over the dinner, and when the coffee and cigars appeared, he very neatly tendered a welcome to the delegates, which was replied to by Mr. Paulhus and Mr. O'Connor.

Speeches were short and rapidly passed by, and

after Mrs. McLeod entertained with two or three songs sweetly rendered, the orchestra struck into dance strains and the votaries of Terpsichore took the floor. Dancing continued until midnight, when prior to leaving, the delegates tendered a very hearty vote of thanks to the President and officials of the Canadian Fish & Cold Storage Company, Ltd., for their entertainment.

Visit to Sunnyside Cannery, Skeena River

On Thursday morning, the delegates and their ladies, accompanied by a large party of Prince Rupert ladies and gentlemen, boarded the Fisheries Patrol steamer "Thomas Crosby" and steamed out of the harbor towards the Skeena River. The Association was indebted to the Department of Marine & Fisheries for the use of the steamer and Chief Inspector J. T. Williams did everything in his power to make the cruise enjoyable. As a guide and a raconteur of British Columbia history and Indian legend, Mr. Williams is a past master and always had an interested audience around him.

Fine sunny weather saw the steamer heading in through the "slue" of the Skeena River and the cannery establishments on that famous salmon estuary were seen nestling under the frowning, tree-clad and snow-capped heights. A cordial invitation from J. F. Strang, Manager of the Sunnyside Cannery of the Gosse-Millerd Packing Company, Ltd., to inspect his cannery was being availed of, and the steamer made fast alongside the cannery wharf about noon.

While the delegates had inspected a salmon cannery before, yet there were several points of difference. The cannery in Vancouver was located in a city with all the concomitants of civilization around it, but up here on the Skeena, the Sunnyside Cannery was a community unto itself. The skyscrapers of the Pacific coast city overshadowed the Vancouver cannery, but Sunnyside snuggled down to the beach 'neath the shadow of tall timber and the towering mountains sloping steeply up from the back-yards of the cannery cottages. Your Vancouver cannery-hand took a street car or a flivver to reach home: at Sunnyside, home was right where he worked.

Long, low spacious buildings of dazzlingly white-washed wood comprised the main plant which was erected on a pile wharf over the waters of the river. Inside, the same cleanly whitewashed walls and white painted benches. A run of fresh caught salmon was being put through and steam was hissing and machines were revolving and clanking and files of filled cans were travelling on endless belts from packing table to be capped and exhausted and finally cooked in the retorts. Indian women, garbed in clean white smocks and with new cotton gloves on their hands were cleaning and packing the fish, and the whole place evidenced sanitary efficiency. One need have no qualms about eating salmon packed by reliable firms in modern canneries. Cleanliness is an obsession with them.

On the wharves, nets were being mended or spread to dry on long poles. On one side, a row of Columbia River salmon boats were being painted or repaired. Out on the river in front of the cannery, fishermen were actually setting their nets and hauling in the salmon. All around lay the mountains, timbered to the snow-line, and with wisps of vaporous clouds clinging to the lush vegetation on their slopes.

After a first-class lunch in the cannery mess-room where everything was as clean as a new pin and the

menu comprised a goodly sample of the various Gosse-Millerd fish products, the party inspected the cannery cottages—snug little homes, brightly painted and comfortable. The Sunnyside School, maintained by the company, was the last place to be visited and one does not know which was the most interesting—the cannery or the school. A smart young lady was engaged in inculcating the rudiments of knowledge into the minds of about twenty young people—girls and boys, whites, Japanese and Indian—and they did their little best to entertain the visitors. The class sang while teacher played the piano; they recited and added and subtracted, while a little Japanese kid captivated the lady visitors with his apprehensive jet-black eyes and doll-like features. The little school-ma'am had her polyglot juveniles well trained and some of the lady visitors, who had taught school in their own days, prophesied that she was not destined to remain long in a cannery school.

It was with some regret that the party left the Sunnyside Cannery and boarded the "Thomas Crosby" again, but before leaving a tribute of thanks and appreciation was extended to Mr. J. F. Strang for his hospitality and kindness in entertaining the visitors.

Board of Trade Luncheon.

On Friday, the Prince Rupert Board of Trade gave a luncheon in honor of the Canadian Fisheries Association delegation. Mr. S. E. Parker, President of the Board, presided, and the guests were Mr. J. A. Paulhus, Vice-President, C.F.A.; Mr. F. W. Wallace, Secretary, C.F.A.; Mr. J. T. O'Connor, Director, C.F.A., and Mr. J. H. Conlon of the Marine and Fisheries Department, Ottawa. Over fifty of the prominent business men of Prince Rupert sat down to the excellent menu provided.

The delegation were welcomed by Mayor McClymont who expressed the interest Prince Rupert had in the fishing industry and everything connected with it. Mr. Paulhus, in reply, stated that among the many surprises he had experienced since coming to this surprising coast was the reception of the delegation in Prince Rupert. Publicity and conservation was the theme of his address.

The Skeena, the speaker said, was the most productive and wealthiest river on the coast and its future was in the hands of the people here. They should consider it a duty to exploit it in such a manner that it would be conserved for future generations.

Speaking of the halibut fisheries, Mr. Paulhus told of the depletion of the banks in the east where at one time the fish was abundant, but from which the American fishing fleets had taken all the halibut. They had been allowed to rest and now they were producing again. It was not wise to depend too much on legislation for there was a maze of legislation to protect the oyster beds of the Atlantic coast and yet the oyster fisheries had been ruined. Thirty years ago the production of these had been enormous. Restrictions and rules had been put into effect but the beds had been completely ruined in spite of restrictions. This was bad for the country. It was the duty of the community to work toward the welfare of the fishing industry and all try to improve it and get the best possible results. The different interests should meet on common ground and secure legislation for the benefit of the fisheries at large.

Supply Important.

Mr. Paulhus urged that there be a campaign of publicity to induce people to use more fish. He had been

responsible for the National Fish Day, which was instituted with this object in view. He asked all to do their share in helping to conserve the fish in such a way that they would produce the largest amount of food without being destroyed.

Board Views.

W. E. Williams spoke of the aims of the Board of Trade in regard to the fisheries. He said it was surprising that the legislators who dealt with the fisheries here were sixty per cent men who had never been west of the Great Lakes and ninety per cent who had never crossed the Rocky Mountains. Men who assumed the responsibilities of legislation he thought, should visit the different parts of the country so that they might be able to vote intelligently.

Mr. Williams said that the aim of the Board was to conserve and to build up, and they hoped to get the rest of Canada to help them, because the supply of fish was important to all. The people here were not kickers, but they agitated for redresses, which was quite another thing. To do that was good citizenship. This was the greatest halibut port in the world and they hoped to make it the greatest salmon port. He spoke of the close season for halibut and of the difference with the cannery in the past over open fishing and the cannery monopoly. What they wanted now was the right to use gas boats on the river in order that the better class of white fishermen might be induced to follow the salmon fishing business. He urged the protection of the spawning grounds and local administrative control of the fisheries, with the chief administrative offices here.

Plenty of Fish.

Mr. Conlon spoke of the bright prospects of the town, of the welcome they had received and of the desire of the Ottawa departments to co-operate with the people on this coast. There was plenty of fish in the sea but the problem was to put it in the homes of the consumers. The fish belonged to the whole people and they were bound to conserve it for the whole people. He urged marketing the fish in such a manner that repeat orders would come.

Mr. O'Connor spoke humorously of the weather being better here than at Vancouver, of the hospitality of the people here, where the citizens were princes. The gathering of the Board at that luncheon would be a credit, he said, to a town ten times the size.

Mr. F. W. Wallace, National Secretary of the C.F.A., made the statement that neither salmon or halibut would make for the Pacific Coast a permanent fishery. He pointed out that the fishery wealth of Europe for centuries had been vested in two species of fish, namely, the cod and the herring. The cod and the herring, said Mr. Wallace, will constitute the future fishery of the Pacific Coast. But it required aggressive development. It meant developing the cod-fish resources of the Behring Sea and the evolution of methods to successfully and economically cure and dry such fish in the moist climate of British Columbia's coast. The herring fishery would have to be prosecuted off-shore by drifters as in the European seas, and cured according to the highest standards. There was no doubt but what the fish were off, or in proximity to British Columbia's coast, in abundance, but salmon and halibut had taken up practically all the attention of Pacific coast fishermen. The day was fast coming when the salmon and the halibut would have to be

let alone in the interests of conserving the future supply. All that would be left then to keep plants and men going was the cod and herring. For the cod-fishing industry, Prince Rupert would benefit, as she is the closest port in Canada to the great banks of the Behring Sea.

Concluding, the President of the Board of Trade thanked the visitors for their addresses, and the gathering dispersed.

Ladies Entertained.

The hospitality of Prince Rupert was not confined altogether towards entertaining the male members of the small delegation. The ladies of the Pacific Coast city were just as assiduous in paying courtesies to the three ladies of the party. On Friday afternoon, a pleasant reception and tea was given at the home of Mayor McClymont when the visitors were delightfully entertained by the charming wife of Prince Rupert's chief magistrate. "Lovely people," commented an Eastern delegatess. "As in Vancouver, so it is in Prince Rupert. I am beginning to think everybody out West here cultivates two virtues—that of being exceedingly hospitable and that of being charming without formality."

Re-Organization of Prince Rupert Branch, Canadian Fisheries Association

While the delegates were in Prince Rupert, a meeting was held in the City Council Chambers on Thursday evening to re-organize the Prince Rupert Branch of the Canadian Fisheries Association. Those present were Messrs. J. A. Paulhus, F. W. Wallace, J. T. O'Connor, J. H. Conlon, T. H. Johnson, J. F. Strang, Alderman Dybhavn, and Messrs. Lee, Sinclair and Starr.

It was decided to re-organize the Branch and re-elect new officers. Mr. T. H. Johnson was elected chairman, with Alderman John Dybhavn as Vice-Chairman, and Mr. Lee, Secretary.

In thanking the members for electing him, Mr. Johnson stated that the Prince Rupert Branch would work in the closest harmony with the Vancouver mem-

bers for the general development of the Pacific Coast fisheries. He proposed that a wire be sent President Hager congratulating him on his election to the Presidency of the National organization. In conclusion, he assured the eastern delegation that he would support Mr. Hager and make the Pacific Coast presidency a high-water mark for all other presidents to aim for.

Alderman Dybhavn paid a strong tribute to the work of the Association—an idea of which he gained at the Vancouver Convention. He was sure that the C.F.A. was the organization which rising above self-interest and pettiness, would do more to develop the fisheries of Canada than any other thing he knew of. He was glad the Prince Rupert Branch was once more in existence.

Vice-President Paulhus, J. T. O'Connor and Mr. Conlon congratulated the Prince Rupert fish men in re-forming their local branch.

Farewell to Prince Rupert

When the Grand Trunk Pacific transcontinental train pulled out on Saturday morning with the C.F.A. delegation aboard, a goodly crowd of Rupert friends gathered to wish the party "Bon voyage." Mr. J. F. Strang, of the Sunnyside Cannery, was there with the announcement that he had a case of canned salmon for each of the delegates shipped to their home addresses. "Something for you to remember Sunnyside," he said.

When the train stopped for a minute at the Inverness Cannery on the Skeena, Mr. Robert Johnson, the manager, was there with the announcement: "I've put some fresh caught Spring salmon in the baggage-car for you to take East with you." This sort of hospitality seemed to exude from these West Coast folks.

It was with real regrets that the delegates saw the mountains and fjords of British Columbia slipping behind as the train sped eastward. "We've sure had a great time," sighed one of the party, "And I wish we were doing it all over again. I guess I'll go and catch up on some of the sleep I've missed the last three weeks. Yes, sir, we've sure had a great time!"



On the Skeena.

Will some one page Charlie Julian? That guy was here, there and nowhere. Never could tell where he would turn up. Couldn't get the right story about that Chinatown party, but if you will page Charlie you might get hold of the truth, although he would probably draw a (red) herring across the trail.

Joe O'Connor with that ever-ready smile and the cheerful story was right up with the band wagon, and made many friends.

The honeymoon couple were made much of, and we think enjoyed themselves. Anyhow they appeared to from the first lunch to the last dance after the banquet. Frank did well for a beginner, we noticed he was at the stag, all right, all right.

Every one regretted that Fred James could not be with us, but were glad he could have such a worthy representative.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

SOME CONVENTION! We'll Say So

When the members of the Canadian Fisheries Association who remained at home hear what those who attended the convention have to say, you may be sure they will be sorry they didn't come. In the first place it was a mighty smooth running convention. The skids were well oiled, and everything just slipped along without any hitches. National Secretary Fred Wallace arrived on the scene of action with his family about a week ahead of the convention date, and plans were whipped into shape so that when the Trans-Canada rolled into Vancouver on the morning of June 2nd, over the C.P.R., the Eastern delegates received a royal welcome. Autos were at the station to carry the delegates to the hotel. All the autos had banners telling about fish such as.

"Fish—Is—Sure—Healthy"

"Fish—Industry—Shows—Headway."

On the arrival at the Hotel Vancouver, the convention headquarters, delegates were assigned rooms and registered. The rest of the day they did much as they pleased. Most of them rested after the long journey from the East. In the evening dinner parties were made up and informal entertainments arranged.

Thursday the real doings began, and they started with a rush. The business sessions were held in the Grill Room of the hotel. Back of the chairman's table the British and American flags were draped about the Association emblem. There were a good number of delegates from Seattle, Everett, Bellingham, and also from Portland, Ore., thus giving an international aspect to the proceedings from the first.

Just as soon as the business session was finished on the morning of the 2nd, everyone adjourned to the Courthouse steps, and flanked on each side by crouching lions (of granite) the group picture was taken. Then luncheon was in order, and for this Hotel Barron was selected, which proved a good guess. A fine lunch was served and an impromptu dance was staged, as they have a very nice dance floor there. This helped to break the spell, and matters ripped along to a delightful accompaniment of good music. When lunch

was finished everyone felt well fitted to go forward with the strenuous business session ahead.

Some of the ladies went for an auto ride, and others rested up, and prepared for the reception held in the hotel Blue Room and Peacock Alley, at which tea was served. The hotel orchestra played during the reception.

Meantime mere man got down to the business of the session. Much was accomplished, and then dinner parties were arranged, and it was seen to that no one was left out. In fact this was one of the secrets of the success of the whole convention. Whenever any of the visiting delegates looked as though he were lost, strayed or wasn't sure which, he was immediately taken in tow by one of the reception committee, and looked after. After dinner everyone and his wife and sister or sweetheart made ready for the theatre party. This was at the Orpheum theatre, and was enjoyed by all. A most interesting moving picture of the herring industry of British Columbia was shown. After the theatre party the ladies were taken home, and tucked in, then the men hied themselves to the Navy League, where a stag smoker was arranged. What with Vaudeville stunts, Japanese sword fights, and Jiu Jitsu, boxing and wrestling bouts, the stern end of the evening rapidly merged into the bow end of the day, and then some, so that it was in the wee sma' hours when they thought of getting home. Even at that several got into "Maggie's Room." Now that may be the same as the information room, as the information room certainly was well patronized, and all kinds of information was required. Here endeth the first day's doings. Gosh! and there's two more to come.

Friday, June 4th, the second day. Business session this morning was a leetle late. Just a leetle late. The start was finally made and an interesting session took place. Just as soon as that was finished the autos took the delegates, and their ladies to the Canadian Fishing Co.'s plant, where an inspection of the most up-to-the-minute fishing plant on the Pacific Coast was made. Under the leadership of "Bob" Payne, the Production Manager of the Company, a

corps of guides took different groups under their care, and piloted them through the wonderful plant. It is well to bear in mind that every branch of the fishing industry is operated under one roof in this plant. Fresh, frozen, cured, smoked and canned fish all being handled, and the largest ice plant in Vancouver is in operation the year round. The Company was fortunate in having a halibut schooner arrive during the morning, and it was being discharged when the visitors were on the tour of inspection. To many of the delegates it was some sight to see the husky fishermen juggling the halibut on the heading table catching a fish in the eye with a hook in one hand and be-heading it with

amusement to those Easterners who had never seen the Oriental at work.

After viewing the canning operations, the corner of the cannery set apart for the lunch was the next objective, and upon reaching there an orchestra livened up proceedings. One lady insists she saw one fisherman jazzing on the heading table with a dying halibut clasped to his oil skinned breast while the orchestra played. By the way this same orchestra was one of the best that could be obtained, and as it was under contract with a certain cafe, special permission had to be obtained before it could be secured for the occasion. Miss Shirley White from the same cafe sang pleasantly during the lunch to which every hungry delegate did full justice as there were no leavings. Tasty menu cards were at each plate and it was a revelation to many that such an appetizing menu could consist almost entirely of fish.

After the luncheon a flash light of the gathering was taken, then Mr. Hager, on behalf of the Canadian Fishing Co., Ltd., welcomed his guests in a very neat speech, after which Mr. Harpell moved a resolution of thanks to Mr. Hager and the Canadian Fishing Co. for their kindness and generosity, and asked Mr. J. T. O'Connor to second same. Mr. O'Connor made a characteristic seconding speech which well represented the sentiments of the guests, the resolution being carried with three cheers and a tiger.

Next on the program, (it was then 2 P.M.), was the trip up Burrard Inlet on the Union Steamship Company's new steamer "Capilano". The steamship company loaned the steamer to the Association for the occasion. Just at this time in the proceedings the moving picture operators got busy. In addition to the official photographer, there were three machines grinding away when the delegates started to go on board, and while the steamer was pulling away from the dock they were still at it. Some publicity this, as these moving picture men represented as many different news services, and these films will be shown all over the country. On board, the orchestra was playing, and everybody was in cheerful spirits. Although it was cloudy when the steamer started, as the head of the inlet was reached the sun shone on the distant mountains displaying the grandeur of the British Columbia scenery at its best. Those who viewed this scene as the steamer turned at the head of the Inlet will remember it for many a day. Some of those who had been on the same trip many times had never seen the view in just the same light. With dancing, and such a jolly crowd on board the trip seemed very short, and it was 6 o'clock, and the dock was in sight before anyone realized the time had slipped so rapidly. There was a short business session on board, which helped move the business end of the convention along somewhat. Autos were in waiting to take the guests back to the hotel and then private dinner parties were in order. At no time was a delegate allowed to eat alone. Absolutely nothing doing in this respect. Not the thing a-tall!

At 8 P.M. another business session was called, and meantime the ladies were "dolling up," and wending their way to Mrs. Hager's where a most delightful musicale was held. Autos were on hand for the visiting ladies both to and from the musicale.

At this evening business session, about every firm engaged in the fish industry was represented. It was one of the best attended sessions of the whole conven-



R. R. PAYNE, Vancouver.

Production Manager, Can. Fishing Co., Ltd.
Vancouver Member who made things Pleasant for the
Visitors.

a heavy knife in the other hand. Each guide had learned his lesson well, and many were told more about the fish business during the next hour than they ever heard in all their lives. Others saw more fresh and frozen fish than they had ever realized were handled in any one plant in Vancouver. The well planned smoke house, and the product it was turning out was most interesting to all. Some of those Nova Scotia chaps took some time to discuss the merits of the British Columbia product as compared with their home products, especially the kippered herring. They had nothing to compare with the kippered salmon. We'll say they didn't anyway. In the cannery, the "Iron Chink" was a source of much curiosity, and the Japanese women who were working at the hand packing while their little one' played about caused some

tion. Heads of the firms who had not been able to attend the daytime sessions were present, and it was a real pleasure to see the interest shown. During the evening some most interesting moving pictures were shown by the Provincial Conservation Commission under the direction of Dr. Baker, the Chairman. The sea lions, at Cape St. James, and the Big Game of Northern British Columbia being of particular interest to the visiting delegates.

Saturday the 5th, was the third and last day. The morning session started in pretty nearly on time, and some mighty important papers were read. In fact this session got so interested the luncheon nearly got cold. The luncheon this day was one for members only, given by the executive in the Rose Du Barry room in Hotel Vancouver. The ladies left during the afternoon for Capilano Canyon, and the Canyon View Hotel where they enjoyed lunch under the guidance of the ladies committee, afterwards taking a drive around Stanley Park before attending the delightful tea at Mrs. Shull's on Shaughnessy heights. The afternoon business session was a closed session for members only. The nomination committee reported, and also the resolutions committee. Important resolutions were passed, which are recorded elsewhere in this number. This session closed the business part of the convention, and all felt that a great deal of important business had been transacted.

It is certain that at no previous convention has so much business, important to the industry, been transacted, nor so many important scientific paper read or papers having such a great bearing on the industry. The exchange of ideas by men from different parts of the Pacific Coast and from the East went a long way towards accomplishing results that would take years to bring about by other methods.

At seven o'clock the male delegates began to gather for the banquet, which was held in the lower dining room of the hotel. At the head table were seated the newly elected president, A. L. Hagar, who also acted as toastmaster; on his right the past president A. H. Brittain, first vice president, J. A. Paulhus, the United States Consul General, Fredk. H. Ryder, E. W. Hamber, General Manager B. C. Mills Timber and Trading Co. Ltd., and J. J. Harpell, publisher of the Canadian Fisherman and chairman of the publicity committee of the C. F. A. On the toastmaster's left were National Secretary, Fred. W. Wallace, 3rd Vice president and chairman of the Vancouver branch F. E. Burke, Prof. John N. Cobb, Dean of the College of Fisheries of Washington, and Lt.-Col. L. W. Gill, Director of Technical Education for Canada and Dean Clements of the University of B. C.

The toast to "The King" opened the speech making. Then the Toastmaster called upon the past President to answer to the toast "East and West." Mr. Brittain's address was chock full of good sound sense, and went a long way to foster the good feeling between the East and West generated at the convention. After giving a report of his stewardship, Mr. Brittain placed the chain of office about Mr. Hagar's neck thereby completing the installing of the new president. Mr. Hagar then answered to the toast "Our Canadian Fisheries." In his address Mr. Hagar demonstrated that among his other accomplishments, he is a first class after dinner speaker. His speech, which was well thought out, held the interest of his audience from the beginning. His earnest request to the mem-

bers of the association to carry on along the lines that would work the greatest good to the industry indicated his plans for the conduct of the association affairs for the coming year.

After the toast "Our Guests" Mr. Paulhus thanked the association for his election to office, and extended



A. S. McLean, Vancouver.

Secretary, Western Packers, Ltd.

Who did his Share in Making the Convention a Success.

a most cordial invitation to all the members who possibly could, to attend the next convention which would be held in Montreal.

Prof. Cobb was called upon for a speech, and answered in his usual happy vein.

Mr. Harpell expressed the pleasure of the delegates at the reception given them, and called for three cheers, which were given. Mr. Hagar then called upon the chairmen of the different convention committees to stand and thanked them all very kindly for their efforts to make the convention a success, his remarks being followed by three cheers and a tiger as endorsement.

At this time the Ladies, who had been having their banquet at the Hotel Barron, returned, and the floor was cleared for dancing, which was indulged in until the hour of midnight, when all joined hands and sang Auld Lang Syne thus ending the 4th convention of the Canadian Fisheries Association.

THE LADIES ENJOYED THEMSELVES.

Mrs. F. E. Burke, convener of the Ladies Committee, ably assisted by Mrs. A. L. Hager, had a really enjoyable program arranged for the entertainment of the visiting lady delegates, and from the Reception on Thursday, June 3rd, the opening day, until the end of the ladies banquet on Saturday night, and the impromptu dance with the gentlemen at the close of their banquet, every available minute was taken up.

The ladies attended the first lunch of the convention with the gentlemen, after every one had been photographed for the group picture of the convention, which was taken on the steps of the Court House. The lunch was enjoyed by everyone, and it being held in the Barron Hotel, which has a dance floor in the dining room, the ice was thoroughly broken for all concerned when someone called for a dance. The President, Mr. A. H. Brittain, with Mrs. Hager as a partner started the fun and then everything was all right. From that time until the end of the convention there was no stiffness to the social activities.

The opening reception at which Mrs. Frank James of Toronto, and Mrs. J. A. Paulhus, of Montreal, poured, was held in the Blue Room and Peacock Alley at



MRS. A. L. HAGER, Vancouver.

Who Assisted Mrs. Burke in Entertaining the Lady Visitors.



MRS. F. E. BURKE, Vancouver.

Convener of the Ladies Committee.

Hotel Vancouver. Many of the wives of the local members attended, and welcomed the out of town ladies. In the evening the ladies joined the gentlemen in a theatre party at the Orpheum.

On Friday the ladies visited the Canadian Fishing Co.'s plant in company with the gentlemen, and after a delightful and unique lunch in the cannery of the plant, all enjoyed a beautiful sail up Burrard Inlet as far as Wigwam Inn.

In the evening Mrs. A. L. Hager entertained at a musical at her residence on Shaughnessy Heights. Mrs. R. V. Winch and Mrs. H. S. Clements served. Those taking part in the very enjoyable program, which was arranged by Mrs. J. E. Eckman, were Mr. and Mrs. Chambers, Mr. Pacey, Mrs. Eckman, and Miss Kentish Rankin.

Saturday morning, at 10.30 the ladies were conveyed by motor cars to Capilano canyon, where after visiting this wonderful gorge, they lunched at the Canyon Hotel. Returning, a drive around Stanley Park was taken, which gave all a chance to see this wonderland at Vancouver's front door.

After the drive around Stanley Park, Mrs. Harry Shull entertained at tea at her residence. Mrs. D. W. Branch of Seattle, and Mrs. A. L. Hager poured.

On Saturday evening the ladies' banquet was held at Hotel Barron, while the gentlemen were holding theirs at Hotel Vancouver. The ladies had a very good attendance at their banquet, and afterwards joined the men at the Hotel Vancouver where an impromptu dance was held at the conclusion of which

everybody joined hands in singing Auld Lang Syne.

Mrs. F. E. Burke and her committee deserves a great deal of credit for the preparing and carrying out of the ladies program. Mrs. A. L. Hager, Mrs. James Andrews and Mrs. Harry Shull comprised the committee, and these ladies certainly made the visiting ladies feel that they were welcome, and all that Vancouver could offer was theirs for the asking.

There was an average attendance of nearly fifty ladies at the different functions.

FISHERY EXPERTS BROUGHT TOGETHER RESULT OF RECENT CONVENTION

One of the first direct results of the C. F. A. convention in Vancouver was the bringing together of the fishery experts of British Columbia, the State of Washington, and the State of Oregon. All these districts have many matters in common, which are of interest to each and every official in the respective districts. This was the first time in the history of the industry when all were brought together on the common basis of exchanging information as to different methods in connection with their work. As a result of these discussions Messrs. J. A. Rodd, Dominion Superintendent of Fish Culture, of Ottawa, and Col. F. H. Cunningham, Chief Inspector of Fisheries for British Columbia, visited the Bonneville hatchery at Bonneville, Oregon, which is operated by the State Fisheries Commission. This visit has resulted in the getting together of men who have never met although they knew of each other as being engaged in work along the same lines. From now on there is no doubt that the general exchange of ideas will result in benefit to all concerned. It is just such events as these that mean long strides ahead in the fishing industry. On the Pacific Coast the question of fish culture is along practically parallel lines in the United States, and Canada, and the exchanging of ideas will result in a decided benefit to all engaged in the industry. Advancement in any industry for the good of all must be along the lines of co-operation, and this co-operation can best be obtained by members of the association representing that particular industry taking an active interest in the association work.

CONVENTION SHOWS IMPORTANCE OF ASSOCIATION ACTIVITIES IN THEIR RELATION TO THE FISHING INDUSTRY.

Co-operation seems to prevade any gathering of business men, engaged in the same line of endeavor, at the present time. This was exemplified recently at the convention of the Canadian Fisheries Association. For some time past there have been attempts made to have an advisory board appointed by the Department of Marine and Fisheries to administer the fisheries of British Columbia. This matter was thoroughly discussed at the convention, and there was an evident desire on the part of the members of the association to get together on a common basis with the idea of arriving at some arrangement whereby matters relating to the industry as a whole, and in particular in regard to the Pacific Coast, be taken up by the executive of the Canadian Fisheries Association. It was suggested that all matters relating to the industry be taken up by the executive of the Association, as representing the entire industry, (and this would mean co-operation with the fishermen where they were directly interested), and they in turn would place such matter before the Chief Inspector or Officer in charge of the Fisheries Division who represented the Department at Ottawa. The Department in turn would place

any suggested changes in regulations, etc., before the executive, through the Officer in Charge, and they in turn would place the suggested changes before the industry so that the industry would have a chance to pass on such changes, before same were put into operation. It has been stated that the Officer-in-Charge has certain powers which he may exercise without taking the matter up at Ottawa. If this is so then matters requiring immediate attention may be handled without undue delay. If on the other hand it was found that the officer does not have the authority, then it would be up to the executive to take the matter up at Ottawa at once, and find out why this power was not given to the Officer-in-Charge.

This suggestion was endorsed for a try out for the coming year after some discussion, when a resolution to make a request for a board of control to be appointed for the fisheries of British Columbia was withdrawn. This was a long step in the right direction, and it is believed that Ottawa will appreciate the position taken by the industry, as represented by the Canadian Fisheries Association.

This is as it Should be.

By the executive handling matters affecting the industry, which are to be placed before the Officer-in-Charge, it means that those directly affected by new regulations and laws, and changes, will have the handling of such matters. This is as it should be.

It is also well to bear in mind the fact that such an arrangement is Non-political, non-partisan, industrial and economical, and through the executive every branch of the industry is represented.

The Officer-in-Charge, is the direct representative of the Government, and it is through him that all matters pertaining to the industry should be handled. If it is found that he does not have the authority to handle such matters then it is time to go to headquarters and find the reason why. If matters cannot be adjusted new laws altering such conditions should be put on the books.

As regards matters that need immediate action, as affecting the preservation of the different varieties of fish, it is understood that the Officer-in-Charge is clothed with full powers to take such steps as are deemed necessary at once.

With this method of procedure decided upon, it is up to the members of the association to carry out these plans for the coming year, and give them a fair trial.

STORMY WEATHER INTERFERES WITH FISHING ON WEST COAST OF VANCOUVER ISLAND.

For some time previous to the middle of June there had been very stormy weather on the West Coast of Vancouver Island. The result has been that the catch of spring salmon is very much smaller than last year at this time. This also applies to pilchard. The fish seem to be there but it has been so rough the boats simply could not fish. When it was calm enough to go out the returns were good. It is expected that the catch of pilchards will improve as the weather gets better.

LABEL EXHIBIT GOES TO OTTAWA.

Upon the request of Mr. J. H. Conlon, Fish Marketing and Publicity Commissioner of the Fisheries Department at Ottawa, the display of canned fish labels which was shown at the Fisheries Convention in Vancouver has been shipped to Ottawa for exhibition purposes. This speaks well for the display and will no doubt create a considerable amount of interest wherever shown.

A UNIQUE IDEA.

F. E. Payson, Secretary of the Vancouver Branch of the Canadian Fisheries Association secured the names of prominent fish men, fish culturists and officials, who attended the convention by having each man place his signature on the large association emblem which hung behind the chairman at the business sessions. This will be framed and hung in the Association office in Vancouver, as a memento of the 1920 convention.

CANADIAN—UNITED STATES.

Sockeye Salmon Treaty Signed.

On May 25th, the treaty between Canada and the United States providing for the preservation, protection and propagation of the "Sockeye" salmon in waters contiguous to the United States and Canada in the Fraser River System, was signed by Ambassador Sir Auckland Geddes for Great Britain, Sir Douglas Hazen for Canada and Secretary Colby for the United States.

SUPPLY OF LEATHER WILL BE MUCH AUGMENTED IF PLANS TALKED OF ARE PUT INTO EFFECT.

There is considerable talk in British Columbia of utilizing sea lion skins for leather. This has already been done in the United States to a limited extent, and one or more companies may be incorporated in the Pacific Coast province to carry out the idea.

CANNED SALMON LABEL DISPLAY.

In the rotunda of Hotel Vancouver, during the convention, there was a display of labels used on the canned fish that aroused considerable interest. These were neatly arranged on cardboard, and rested on a table especially prepared for them. The names of the different firms to whom the labels belonged were at the top of each card, and not only the general public commented on the unique display but many engaged in the industry studied the different designs and colors. The B. C. Printing and Litho Co., Ltd., kindly arranged the cards, and also had some of their own labels on display.

FISHERIES DISPLAY CREATED A LOT OF INTEREST.

The experimental station of the Dominion department of Fisheries sent over a display from their station at New Westminster. This consisted of plaster casts of the different varieties of salmon, mounted on suitable boards, with placards stating the variety. These were in colors, and much interest was shown by the general public. Sets of glass tubes containing the different kinds of salmon eggs, showing the different stages of development from the spawn to the time when the sac had been absorbed, aroused great interest among the public who had never before seen such a thing. This exhibit was from the Harrison Lake Hatchery, of which Mr. Alex Robertson is in charge.

WINDOW DISPLAY COMPETITION DURING THE CONVENTION.

The following were awarded prizes for the best displays of fresh, cured and canned fish, the competition for which was held during the convention in Vancouver.

Best Window Display, Fresh and Cured Fish.

First Prize Economy Market, (Chris Johnson), 71 Hastings Street, West.

Second " P. Burns and Co., Ltd., Mainland Market, 16 Hastings Street, West.

Best Stall Display, Fresh and Cured Fish.

First Prize A. Harrison, Stalls 27, 28 and 29, Cal-Van Market.

Second " S. Christopher, Stall 9, Cal-Van Market.

Best Window Display, Canned Salmon.

First Prize McTaggart's Grocery, Corner Robson and Howe Streets.

Second " Kirkham's Grocerteria, 1035 Robson Street.

Miss D. Bourne.

By holding the window and stall displays there was a certain amount of interest aroused by the retail section of the industry, and this in turn is bound to be spread among the consumers of fish, and this is what every convention should attempt to do.

COLUMBIA RIVER PRICES SET BY THE CANNERIES AND COLD STORAGE PLANTS.

Prices to be paid the fishermen on the Columbia River by the canneries and cold storage plants was set at a meeting held in May by these two branches of the industry. No chinooks under 18 pounds are to be taken. Those weighing over 8 pounds will bring 12 cents per lb., steelheads 9 cents, bluebacks 9½ cents, silversides (cohoes) 3 cents, shad 1 cent, white sturgeon 10 cents, green sturgeon 5 cents. These figures are lower than that set by the fishermen's union, which were 14 cents for cannery chinooks, and 16 cents for the large or cold storage chinooks. The difference being on weight, which would be 23 pounds and over for the cold storage fish.

The prices set are different from 1919 prices as follows:

Chinook three quarter cent higher, steelhead 1 cent higher, bluebacks three quarter cent higher, silversides and shad 2 cents lower, white sturgeon three quarter cent higher, green sturgeon no change.

A. H. SHERMAN AND CO., LTD., PURCHASE PORT RENFREW CANNERY.

Mr. A. H. Sherman reports the purchase of the Port Renfrew Cannery from Balfour, Guthrie and Co., by the A. H. Sherman Co., Ltd. This Cannery is situated on the West Coast of Vancouver Island, and was bought in by the Balfour, Guthrie Co. when the Defiance Packing Co. assets were sold at auction the first part of May.

WOULD INCLUDE FISHING LICENSES.

The question was broached by R. T. Harding at a sitting of the Crown Lands Commission of the Ontario Government of extending the scope of the inquiry, taking in mining concessions and fishing licenses. The Crown representative said he had been thinking about this, and he had discovered recently that there was a very large number of timber and mining lands mixed up together. Mr. Justice Riddell said that with these matters and fishing licenses they would be dealing with practically all the national resources. The question of extending the scope was a matter for the Government.

NEW FISH COMPANY FORMED

Canadian Fish Products, Limited, has been granted incorporation by the Federal Government, with a capital stock of \$15,000,000, and with the chief place of business at Halifax, N. S. The incorporators are I. E. Vernon of Portland, Maine, R. A. Pringle K. C., Louis Cote, T. A. Burgess, and R. H. Pringle of Ottawa. The company is authorized to carry on the business of fishing in all its branches.

MR. J. A. RODD, SUPERINTENDENT OF FISH CULTURE, OTTAWA, VISITS BRITISH COLUMBIA.

During the latter part of May and first part of June, Mr. J. A. Rodd visited British Columbia and inspected every fish hatchery in the district. Many of the hatcheries were new to Mr. Rodd, and some of the Northern British Columbia country was an eye-opener and proved most interesting to him.

The Inspector found the Vancouver Island hatcheries well kept, and the officers in charge showed great interests in their duties. The hatcheries visited on Vancouver Island were Cowichan Lake, Anderson Lake and Kennery Lake. At Cowichan and Anderson lakes practically all the fry had been distributed as the season is earlier than Kennedy Lake, and Owikano Lake on Rivers Inlet, where the fry was still in the troughs and ponds. There were found to be in first class condition.

The trip to these hatcheries was made in the fisheries cruiser "Givenchy", and Mr. Rodd was accompanied by Chief Fisheries Inspector Cunningham of Vancouver.

Mr. Rodd also visited the Harrison Lake hatchery where the new system of hatching salmon eggs in gravel is being tried out. This is a near to nature system, and the hatchery officials say that considerable more experiments would have to be tried out before it would replace the trough system now in use.

Another trip that proved most interesting was that to the new hatchery at Lakelse Lake, which Mr. Rodd made in company with the Fisheries Department engineer, Mr. John McHugh. Mr. Rodd made the trip North by steamer, and returned by rail catching the train at Terrace, which was a new trip for him.

During the convention of the Canadian Fisheries Association, Mr. Rodd was an active figure, being one of the representatives of the Dominion Fisheries Department, and also taking a keen interest in the hatchery questions which came up during the convention and which caused a great deal of discussion.

The visits of the heads of the different departments from Ottawa greatly assist in keeping the industry in touch with affairs at headquarters, and also bring the heads in close touch with the industry, and these visits cannot be made any too frequent.

Mr. Rodd had a most interesting trip, and has probably been brought in closer touch (owing to the convention being held at the same time) with the industry than ever before. It is to be hoped he will make the trip again at an early date.

WALES ISLAND CANNERY BUILDS TRAP AT NAAS RIVER.

The Wales Island Cannery are constructing a trap at the Naas River near the American Boundary. This is not a new license but one that the cannery have had for some time. It is reported that the Americans are planning on so many traps in the vicinity of the Canadian Boundary this year.

SALMON LICENSES SO FAR ISSUED SMALLER THAN LAST YEAR.

Although there have been fewer licenses issued for canneries, purse seines, and gill nets, it does not mean that the number will be issued for fishing may not be as large as last year. The fact that there is no date limit, and that a man may be hunting schools of salmon, and not want to ask for a license until he knows what area he will want to fish in, may account for the slowness of applications coming in. On May 27th the following licenses had been issued:

47 cannery; 54 Purse seines; 15 trap net; 18 drag seine; 885 Gill net for the Fraser River; 408 Gill net for district No. 2 or waters North of Cape Caution and extending to the Alaskan Boundary; 77 gill net for district No. 3 or waters contiguous to Vancouver Island, and 17 herring Purse Seine licenses.

NOTES OF THE INDUSTRY.

Mr. S. K. Murray of the Goose-Millerd Packing Co., Ltd., has returned from his holidays. Mr. R. R. Payne and wife are back from a motor trip to Portland, Ore., and way points. "Bob" is production manager for the Canadian Fishing Co., Ltd., and this trip was taken after the C. F. A. Convention. He says he needed it. Mr. Fred Mathers, is again a familiar face among this Company's efficient force.

MARKED SALMON.

William W. Walsh of the Bureau of Fisheries, Washington, D. C., writes us regarding an item in last month's *Canadian Fisherman*. On page 132 of your May issue there appears a note concerning a "marked" salmon caught by E. S. Hicks of Lewis Channel, B. C. It is stated that the "mark" bore the legend "FR2-L1891" in a circle. Is it not possible that the gentle-



men who deciphered the legend had rather vivid imaginations? For, from the very brief description, it appears highly probable that the mark was the work of a lamprey.

Many of the lamprey scars found on salmon bear a striking resemblance to the impression of a stamp or brand. A photograph of one of these scars on the tail of a salmon is enclosed.



Amendment to Fish Inspection Act Finally Passed



Ottawa, July 2 (Special to Canadian Fisherman).—Bill No. 50 to amend the Fish Inspection Act has become law. After a long struggle in committee, and after having been all but forgotten by everyone concerned, the government got the measure through in the final hours of the dying session, and the bill passed after three o'clock on the morning of Dominion Day, 1920. The chief antagonists of the bill had gone home, secure, as they thought, in the knowledge that a vote on the bill could not be reached before prorogation; and, indeed, it seemed as though such would be the case, for at three o'clock on the morning of the final day of the session, the bill still stood on the Order Paper of the Commons, and it appeared as though the ministers and the House were too sleepy to see it through.

The Minister of Marine, Hon. C. C. Ballantyne, it is stated would have forgotten it entirely, had there not been in the official gallery an officer of the Fisheries Department who had an intense interest in seeing that measure become law. He therefore "put a flea in the minister's ear," and the bill was given the committee stage amid a storm of protests from the leader and near-leaders of His Majesty's Loyal Opposition.

The debate on the bill was brief. The motion was to go into committee on the bill.

Hon. Mackenzie King: This is a pretty late hour in the day's sitting to bring up further business.

Hon. Mr. Ballantyne: This bill was before the House some weeks ago and was referred to the Select Standing Committee on Marine and Fisheries. The Government is anxious to get the bill through, and the committee has reported favorably on it. It is merely a bill providing for compulsory inspection of fish.

Hon. Mackenzie King: Was the committee unanimous on the bill?

Hon. W. S. Fielding: I have a rather divided opinion about this bill. As I remarked at an earlier stage, I know the object of the bill is a good one in providing for inspection, especially in relation to our foreign trade. I have some doubt whether the bill is satisfactory to the fishermen generally, and that is also a matter of divided opinion.

Although I recognize that the object of the bill is a good one, I think we need some more education amongst our fishermen before they will accept it. If the minister wishes to press the matter tonight, I can only press my objection on that ground.

The bill was reported from committee, read a third time and passed.

An amendment made in committee was concurred in by the House. This provides that where a packer of fish shall have used an unsatisfactory barrel, the onus shall be upon the maker and packer of the barrel, rather than upon the dealer handling the fish.

The clause in question was amended to read:

"(Sec. 1) If any container packed with fish which is required by this act or by any regulation to be marked is unmarked, such container and the fish therein shall be held by the inspector until the name of the maker is ascertained and marked thereon and the maker shall be liable to the penalties elsewhere provided for in this act."

Fishery Department officials are jubilant over having the bill through. They claim the only objection to it in committee was that it could not be worked, and now they are prepared to demonstrate, if given a chance, that it can be worked without any great hardship to anyone except men who seek to evade the law.

LUNENBURG FOUNDRY COMPANY LIMITED.

On another page of this issue will be seen the advertisement of the Atlantic marine motor, built by the Lunenburg Foundry Co. Ltd., Lunenburg, Nova Scotia. This company have been building engines for a good many years as a side line to their other products, and supplying the local trade. The reputation of the engine was such that it brought engines from distant fields and the company about five years ago after a change of managers, decided to enlarge their premises in order to take care of the increased demand. The first addition was put to the plant in 1915 and since then each year a new addition has been added and new modern machinery installed, so that the company are now able to take care of the big volume of business which they receive. Three years ago their engine the Atlantic was introduced in Newfoundland with the results that today it is the leading engine in this field.

During the last two years the company found it necessary to run a day and night shift when the output reached over 100 engines per month. They also built the Steering Gears, Windlasses, Slips, Pumps, Hoisting Outfits, Stoves and Ranges and it is hard to find a sailing vessel built in the Maritime Provinces or Newfoundland during the past five years that is not equipped with their product. A good many of their outfits go to the ship yards in the State of Maine, to the Island of Jamaica and some going even as far as Greece.

In 1915 the plant occupied a floor space of 23,300 square feet while today the floor space is 41,740, this, of course, includes the floor space of their new concrete office building. The cut of the plant as shown in the advertisement does not show the plant as it is today, unfortunately a new cut could not be procured at the time of going to press.

Much credit for the progress of the plant is due Mr. D. M. Eisenham who took over the managership in 1915.



Something About Acadia Engines and the Acadia Plant



It is plainly evident that the Acadia Gas Engines Limited, and their subsidiary Companies do not intend to "drive in the other fellow's dust."

Since the parent concern was first organized in 1908 by the present General Manager and President of the Company, Mr. W. T. Ritcey, they have steadily increased and advanced from a small local concern to the largest manufacturers of Marine Engines in Canada.

As will be seen by the cut they are exhibiting at the Canadian Industrial Exhibition in London, England, and it is a safe prophesy to make that the Acadia Gas Engines and their subsidiary Companies will get their full share of the business in Europe.

Mr. W. T. Ritcey is looking after the Exhibition personally and is assisted by Mr. D. A. O'Neil, formerly Manager of their Newfoundland Branch.

It was recently the pleasure and privilege of the writer to visit the plant of the Acadia Gas Engines Limited, Acadia Stationary Engines Limited and the Acadia Motor Car and Trucey Company Limited, of Bridgewater, Nova Scotia, and to trace step by step the process which takes gray iron, brass, steel, bronze

and copper, and converts them into a marine and stationary gas engine, which provides efficient and reliable power at very moderate cost.

It will be impossible to describe in detail each step in the process of making an Acadia gas engine. We will, however, touch upon a few of the more important things and will describe with some particularity the chief parts of that wonderful machine; which has done so much to make the fisherman's life pleasant and happy.

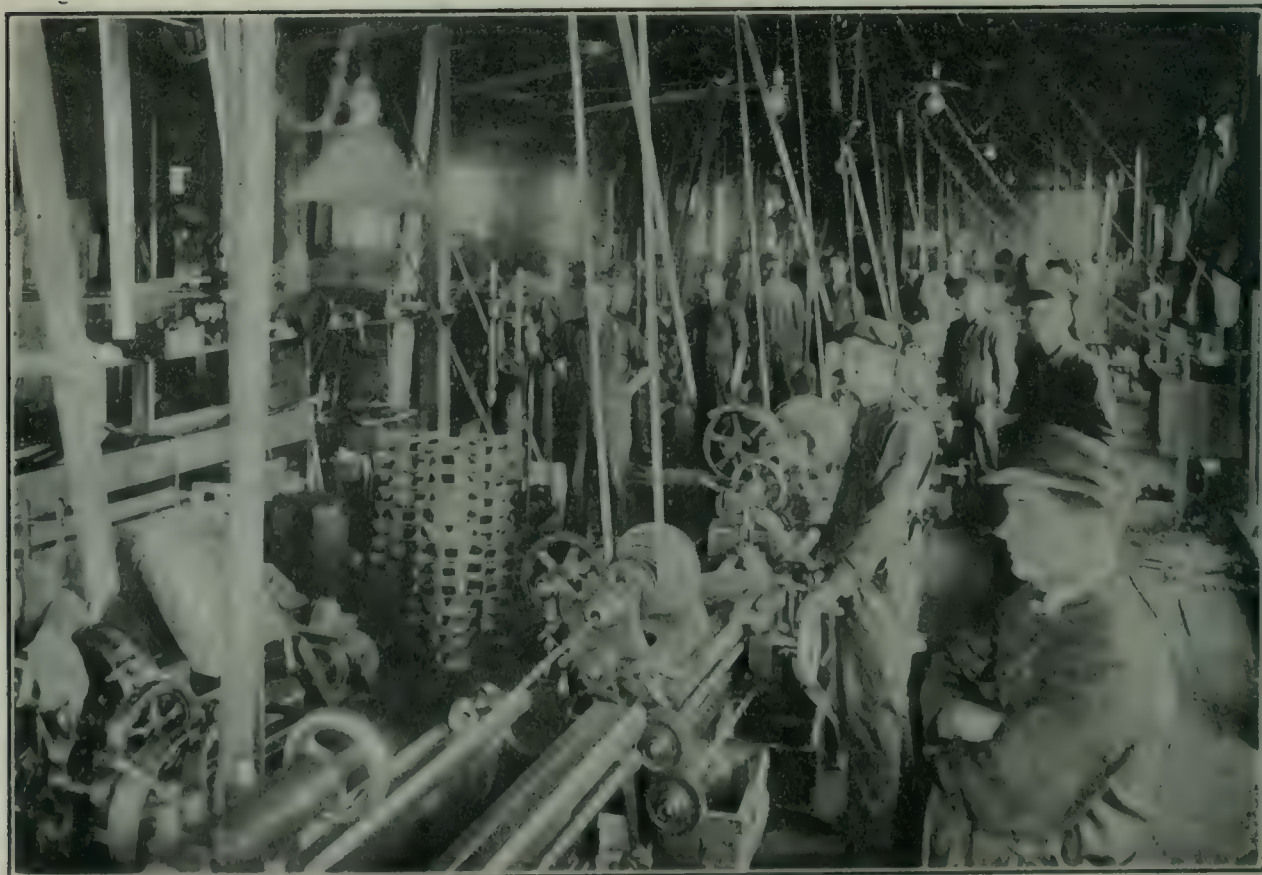
In the upper chamber in the Acadia plant, from plans and blue prints, the wooden, brass, and aluminum patterns of the various parts which compose the Acadia engine, are manufactured. These patterns then go to the foundry, a modern structure with modern equipment. To the casual observer this shop resembles an ordinary stove foundry, but closer inspection reveals a number of important differences. Not only do we find an iron furnace, as in a stove foundry, but brass furnaces as well. Then the moulding of the parts for an engine offer greater difficulty than in the case of a stove, for the reason that an engine



Plant of Acadia Gas Engines, Limited, Bridgewater, N.S.



Foundry of Acadia Gas Engines, Limited, Bridgewater, N.S.



A Corner in the Machine Shop of Acadia Gas Engines, Limited, Bridgewater, N.S.

is more complex. The mold of the outside of an engine cylinder, for instance, is fashioned in ordinary moulding sand by the use of the wooden or aluminum patterns. The molds for the bore and water jacket, are made by mixing sand, core oil and other ingredients together, molding the sand into the required shape in what are called core boxes, and then baking these cores in a room or oven. When they come from the oven these cores can be handled without breaking, provided care is exercised. The cores are placed in the flask or wooden case containing the molds. Everything is carefully prepared, the two parts of the flask are clamped together and all is in readiness for the cast. In the top of the flask is an aperture through which the liquid metal runs, the casting being done as in the case of stoves and ranges. The heat of the molten metal burns up the oil used in making the core mold, and the sand falls away from the casting, the same as the green sand, which has been mixed with water.

After being taken out of the flasks, the castings are carried to the sand blast and mill rooms to be cleaned, later being taken to the machine shop, where very interesting work is done.

Upon entering the machine shop, one is attracted by a very large machine, which suggests a turret on a man-of-war. This is a Bullard vertical boring and reaming machine, specially designed for the purpose of boring gas engine cylinders. After being bored the outside surfaces or bosses of the cylinder are milled to make perfectly square and true joints, and they are drilled by the use of a machine called a jig, which accurately places each hole and makes them strictly interchangeable. Various operations follow in quick succession, until finally the cylinder goes to the paint shop where it is cleaned and painted later going to the basement where the water jacket is tested. Eventually the cylinder finds itself in the erecting shop where the assemblers do their work. The water jacket of the Acadia cylinder has a large space completely encircling the combustion chamber, which ensures a cool piston, avoiding the possibility of over heating and making the engine more efficient.

The principal parts of a gas engine are of course the cylinder, crank cases, crank shaft, connecting rod, piston, igniter, and carburetor. We have referred to the cylinder and now we will describe the other parts of the Acadia engine.

The crank cases are made of cast iron and are surfaced on milling machines or by heavy shapers giving a true surface. They are designed for large bearings which are made of a high grade babbitt metal, reamed to standard size and guaranteeing a perfect running bearing. The crank case of each two cycle Acadia engine has either one or two large hand holes which permit quick removal of the connecting rod. The crank case of each four cycle Acadia has a door which is secured with a Spring and allows the operator to work at the connecting rod with ease.

Acadia crank shafts are drop-forged from specially designed dies and made to open hearth steel by large drop-forging Companies. The bearings are large and made to exact size; the cranks are guaranteed against breaking.

The connecting rods are of the 1 beam design and are made extra long to eliminate the lateral strain as much as possible. The rods are made of a high

mixture of bronze in the two cycle and steel in the four cycle, which is designed to withstand the severe shocks and stresses set up by the force of the explosions. The wrist pin end is made to fasten the pin securely to the connecting rod and the crank pin end is fitted with bearings of the best quality of white metal, and so constructed that any wear occurring may be readily taken up or adjusted by the removal of liners.

Acadia pistons are the same high grade iron as the cylinders so that the expansion is the same. They are of the trunk pattern, being extra long and the two cycle engines have a curved baffle plate to prevent the entering charge from mixing with the exploded gases. The rings are ground true and are eccentric, so that they will expand with equal pressure against the walls of the cylinder, making a perfect compression. The piston bushings in which the wrist pin turns are the best quality of Phospor bronze and are interchangeable.



W. T. RITCHEY, President

The make and break Igniter is a special feature of the Acadia engine on account of its simplicity. The number of parts used in its construction are reduced to a minimum and each part can be removed and replaced at little expense. The igniter is held in place on the motor by two steel studs and nuts, and is provided with a copper gasket so that a slight strain on these nuts will make a tight joint. The spark points can be readily adjusted without removing the Igniter and the electrical current cannot be short circuited by water, which has much to do with the superior operation of the engine.

All Acadia two cycle engines are designed to lubricate through the gasoline supply, which is the most reliable and accurate method. The heavy duty types are also fitted with sight feed oilers which oil the cylinder and wrist pin in piston, and the crank pin in

lubricated by means of a centrifugal ring oiler which is a positive lubrication.

Acadia combined kerosene and gasoline injector carburetor has proved a great success because of its simplicity and efficiency, and its adaptability to any of the thousands of two cycle engines in use. This carburetor is attached to the engine by means of one connection only and will burn kerosene with equally as good results as any carburetor, either kerosene or gasoline in use at the present time.

The Acadia is built both in two and four cycle type, and is very simple in design making it easy for the beginner to operate. Nearly every part going into the construction of this excellent engine is manufactured in the Acadia plant, the only exceptions being the necessary electrical apparatus, and small parts such as priming cups and stop cocks which are manufactured by specialists in that line of work.

After being assembled the engine is taken to the testing shop, where it undergoes a most rigid test lasting from one to five hours. Later the engine is painted, numbered, crated and made ready for shipment.

The growth of the business of the Acadia Company has been remarkable. Starting twelve years ago in a building 32 x 50 feet, with an output of 35 engines per year, the company has grown to such an extent, that today they occupy 65,000 square feet of floor space. They had the usual success last year, having an increase of sales of 40 per cent. over 1918. The engine they manufacture chiefly is of the Make and

Break Heavy Duty type, and in addition to their large business in Canada, they control 50 per cent. of the engine business in Newfoundland. The rough coast of Newfoundland is known to all, and the fact of the "Acadia" meeting with such success there shows it must be an engine most suited for the fishermen. They make large shipments regularly to St. John's, where they have their Newfoundland branch, and last spring they had a trainload in one shipment.

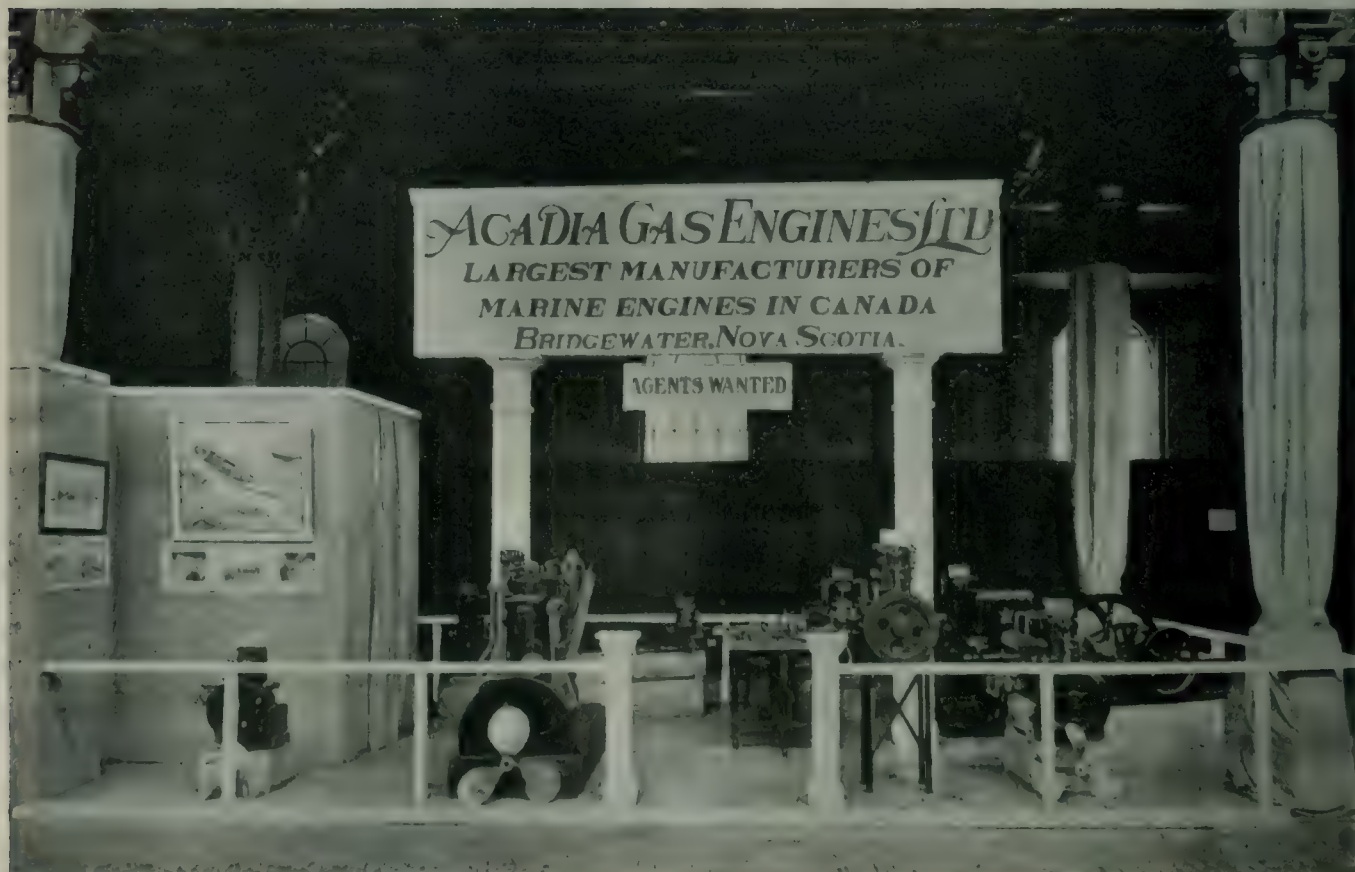
Mr. Ritcey realizing that the trade required a four cycle Marine Engine engaged one of the best designers in the United States and is now manufacturing heavy duty four cycle engines from ten to forty horse power in one, two, three and four cylinders.

We next visited the garage operating under the name of Acadia Motor Car and Truck Company Limited,—a building of two stories in height built of concrete blocks.

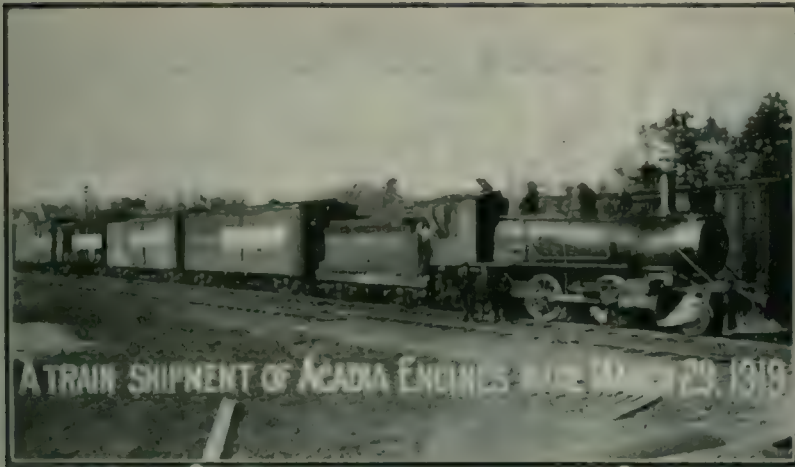
Next we visited the Acadia Stationary Engines Limited. This company has one of the finest buildings for a machine shop, to be found in Eastern Canada. It is built of brick with concrete basement and is two stories in height.

The top floor is equipped with a modern wood-working machine shop, for carpentering and the making of patterns, core boxes, etc., also a paint shop where the Stationary Engines are finished and enamelled. In addition there is the shipping room, also a drafting room and an office which is particularly bright and nicely finished.

The next floor below contains the machine shop



View of Exhibition at Canadian Exposition, London, England



and here will be found some of the latest machines on the market including an automatic screw machine, Bullard boring mill, an especially designed cylinder machine of large capacity, planer and numerous other machines.

The engines are tested in the basement where they also have a store room and wash room for the men.

The $4\frac{1}{2}$ and 6 H.P. Acadia Stationary Engines are in great demand for hoisting on board schooners, sawing, etc., and the $2\frac{1}{2}$ and $3\frac{1}{2}$ are used where engines of smaller horse power are required. The $1\frac{3}{4}$ H.P. Engine is used exclusively for lobster pot hoists, sealing machines, milking machines, etc.

The plant of the Company is conveniently located, the buildings are admirably adapted for their purpose,

the machinery particularly well arranged and the system of work of undoubted excellence. In a word their facilities for manufacturing gas engines are splendid and one can well understand the reason that their business has grown to such an extent. A growth so wonderful, so phenomenal must be the result of undoubted merit. The Acadia gas engine has assuredly "made good."

With so courteous, capable and energetic a president and general manager as Mr. W. T. Ritcey; with an office force of undoubted ability, and a band of expert, faithful mechanics, Acadia Gas Engines Limited is to be heartily congratulated, for the future assuredly holds big things for the flourishing manufacturing industry on the banks of the beautiful LaHave.



The Up-to-date Concrete Block Garage of the Acadia Gas Engines, Limited, Bridgewater, N.S.



Acadia Cylinder—
Two Cycle



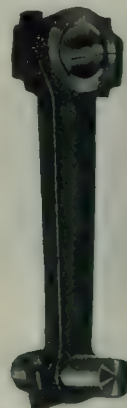
Acadia Crank Cases



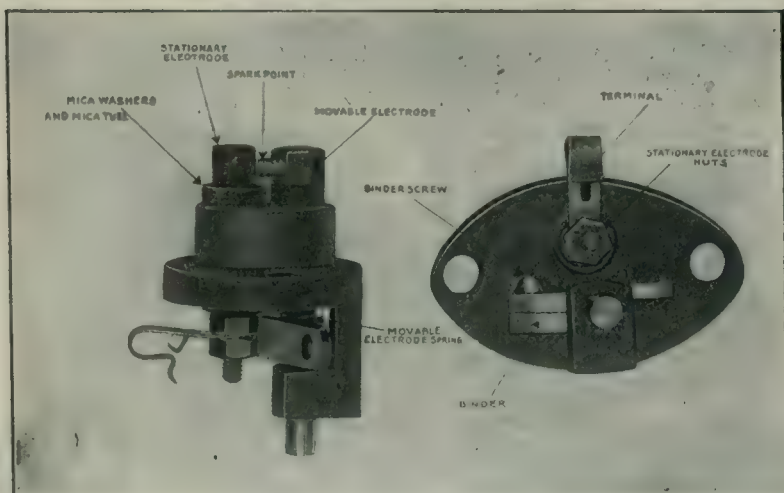
Acadia Crank Shafts



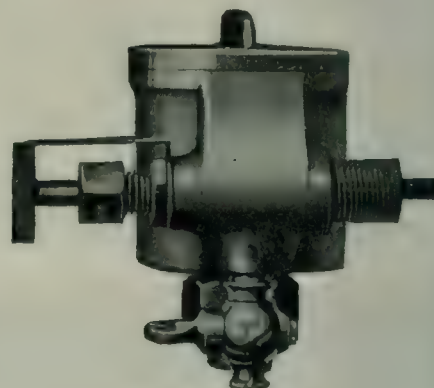
Acadia Piston—
Two Cycle



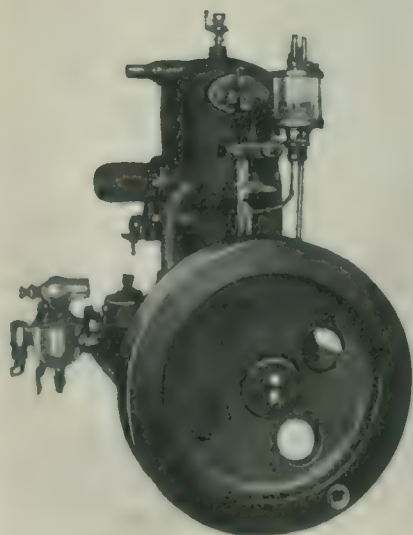
Acadia Connect-
ing Rod—
Two Cycle



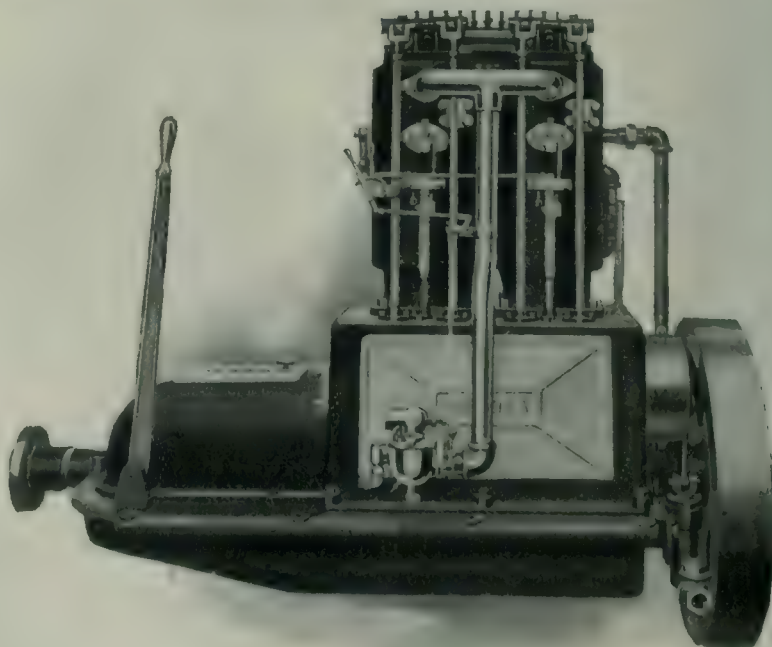
Acadia Igniter—Two and Four Cycle



Acadia Carburetor



One Cylinder, Two Cycle Gas Engine,
6 1/2 H.P.



20 H.P., Two Cylinder, Four Cycle, heavy Duty, Acadia Marine Engine

FRANK E. DAVIS FISHERIES, LIMITED.

Yarmouth, N. S.

PRODUCERS, CANNERS,
CURERS and EXPORTERS of
ALL KINDS OF FISH

Offices :

Boston, Mass., U.S.A.
Gloucester, Mass., U.S.A.

Branches :

Freeport, N.S.
Clarks' Harbour, N.S.
Turpentine Island, N.S.
Port Maitland, N.S.
Grand Manan, N.B.

Cable Address : Privis.

Our Motto: "Right from the
Fishing Boats to you."

FRANK E. DAVIS.
President

L. C. PRIME.
Managing Director

ARTHUR C. DAVIS.
Secretary-Treasurer



THE MARITIME FISH



PART OF THE MARITIME FISH CORPORATION'S PLANT, DIGBY, N. S.

TO SUPPLY THE CANADIAN PUBLIC WITH "QUALITY" FISH—FRESH, FROZEN, SMOKED, CANNED, PICKLED, DRIED, BONED—produced with modern equipment, handled in a sanitary manner, and placed on the market at moderate prices is the aim of the **MARITIME FISH CORPORATION, LTD.**

This object was the inspiration which resulted in the formation of the **MARITIME FISH CORPORATION, LTD.**, in 1910, and ten years in business has been a record of living up to that ideal.

The **MARITIME FISH CORPORATION, LTD.**, was organized ten years ago by consolidating the plants and

businesses of the Canso Cold Storage Co., Ltd., and the Whitman Fish Co., Ltd., of Canso, N.S.; Short & Ellis and Howard Anderson of Digby, N.S.; the Pioneer Steam Trawling Co., Ltd., Halifax, N.S. and A. H. Brittain & Co., Montreal. The amalgamation was the result of Mr. A. H. Brittain's belief that the consumption of fish in Canada could be greatly developed if modern facilities of production, preparing and marketing were employed. The plants at Canso and Digby are located near prolific fishing grounds at both ends of the Province of Nova Scotia and are linked up with rapid transportation facilities to inland markets by the Canadian Government and Canadian Pacific Railways.



HEAD OFFICE - MONTREAL



CORPORATION, LIMITED



The Pioneer Steam Trawling Company, Ltd., of Halifax were the first to inaugurate modern methods of fishing in Eastern Canada. Their initial experiments were carried to a successful application by the **MARITIME FISH CORPORATION, LTD.**, and the Corporation's trawlers were the first to successfully prosecute the fishery for fresh market fish on the Atlantic Coast of Canada.

With strict adherence to the principles responsible for the formation of the Company, the **MARITIME FISH CORPORATION, LTD.**, have secured a reputation for their products in Canada and abroad which is of the

highest. The manufactured fish products of the Company—Finnan Haddies, Smoked Fillets, Canned "Chicken Haddies" and Canned Codfish Flakes—have secured an ever increasing market in Canada, the United States and other countries through the maintenance of a high standard of quality in product and package.

The officers of the Company are J. W. Pyke, President; A. H. Brittain, Vice-President and General Manager; H. G. Connor, Secretary-Treasurer; H. B. Short, Manager of the Digby, N.S., plant; H. F. Robinson, Manager of the Canso, N.S., plant.




FISH DOCK WITH COLD STORAGE IN REAR AT CANSO, N. S., PLANT



PLANTS -- DIGBY & CANSO, N. S.





The Fisheries

NOVA SCOTIA'S ENORMOUS
Afford an Unequalled Market for
- and
Wonderful Opportunities for

The Sea Girt Province of Nova Scotia is blessed with territorial waters prolific in Lobsters, Herring, Haddock, Cod, Hake, Pollock, Mackerel, Gaspeaux, Halibut, Albacore, Clams and Various Shell Fish.---All suitable for the maintenance of thriving inshore fisheries.

If You Are Buying Fish---

If You Have Capital To Invest---

If You Are a Practical Fisherman---

For Full Particulars Regarding

W. B. MacCOY, Secretary of Industries
and Immigration





of Nova Scotia

FISHERY RESOURCES

Buyers of Fish & Fish Products

Investment and Employment

The ports of the Province are all adjacent to the great offshore fishing banks of the Western North Atlantic and afford unexcelled opportunities for the economical exploitation by fishing vessels of the larger type.

Nova Scotia's annual catch of fish exceeds two hundred and fifty million pounds in weight---the highest of all the Canadian Provinces.

COME TO NOVA SCOTIA!

Nova Scotia's Resources write

197 Hollis Street, Halifax



“SCYCO”

OILED CLOTHING

Red and Blue Label

Wet Weather Garments

“SCYCO”

“Fishermen’s” Soft Finish Garments

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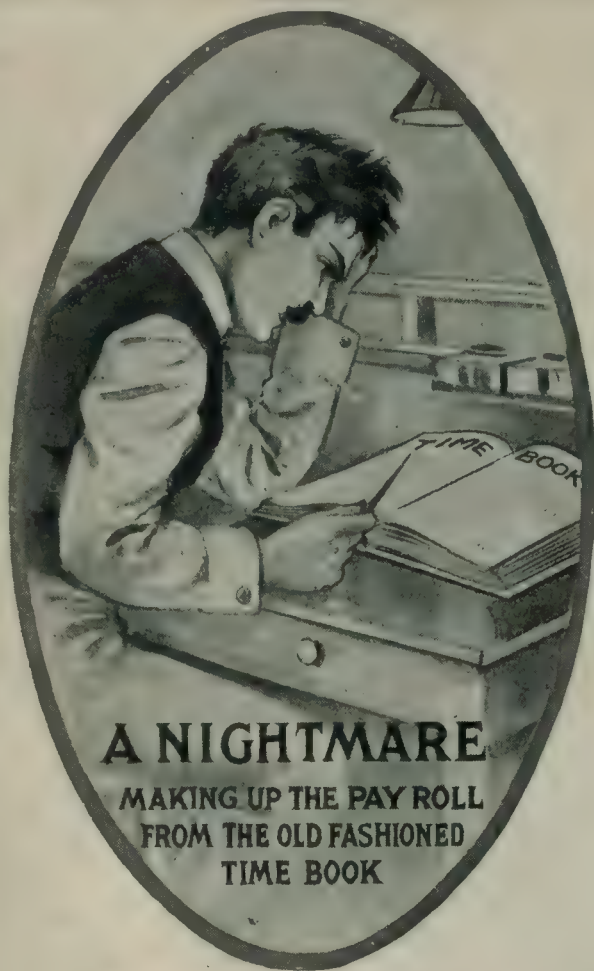
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Official Organ of the Canadian Fisheries Association

VOL. VII.

GARDENVALE, P.Q., JULY, 1920

No. 7

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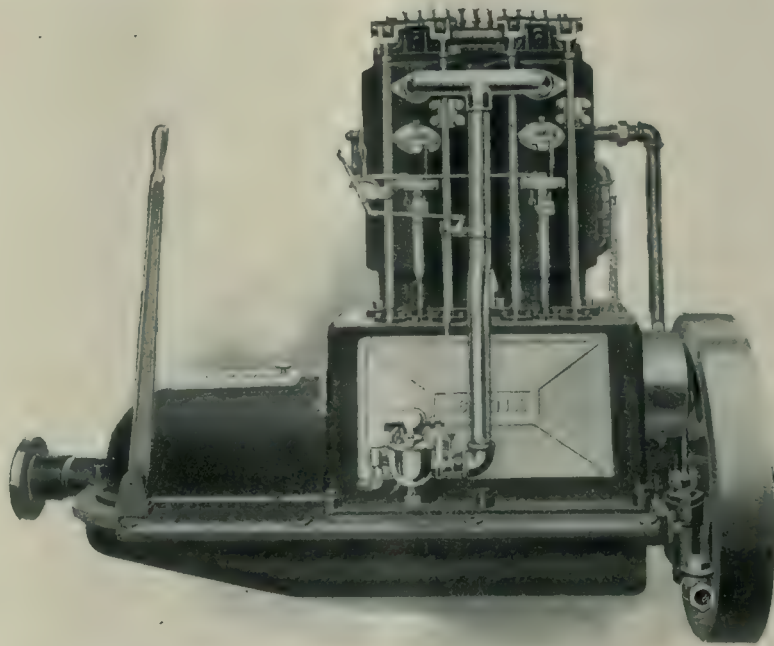
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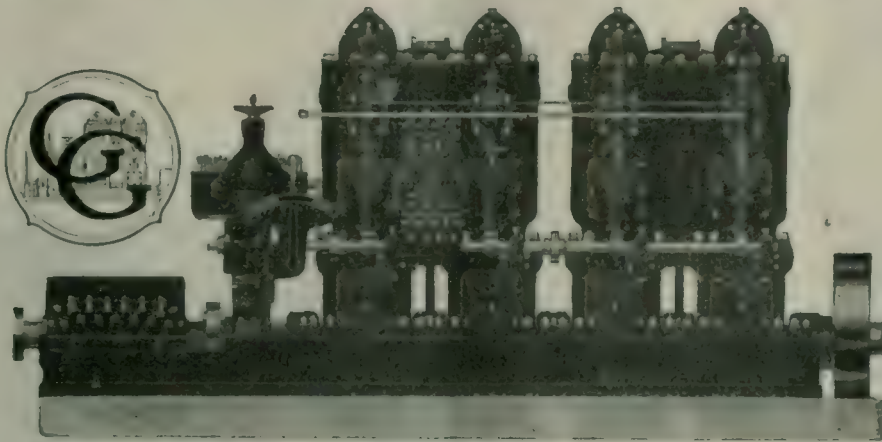
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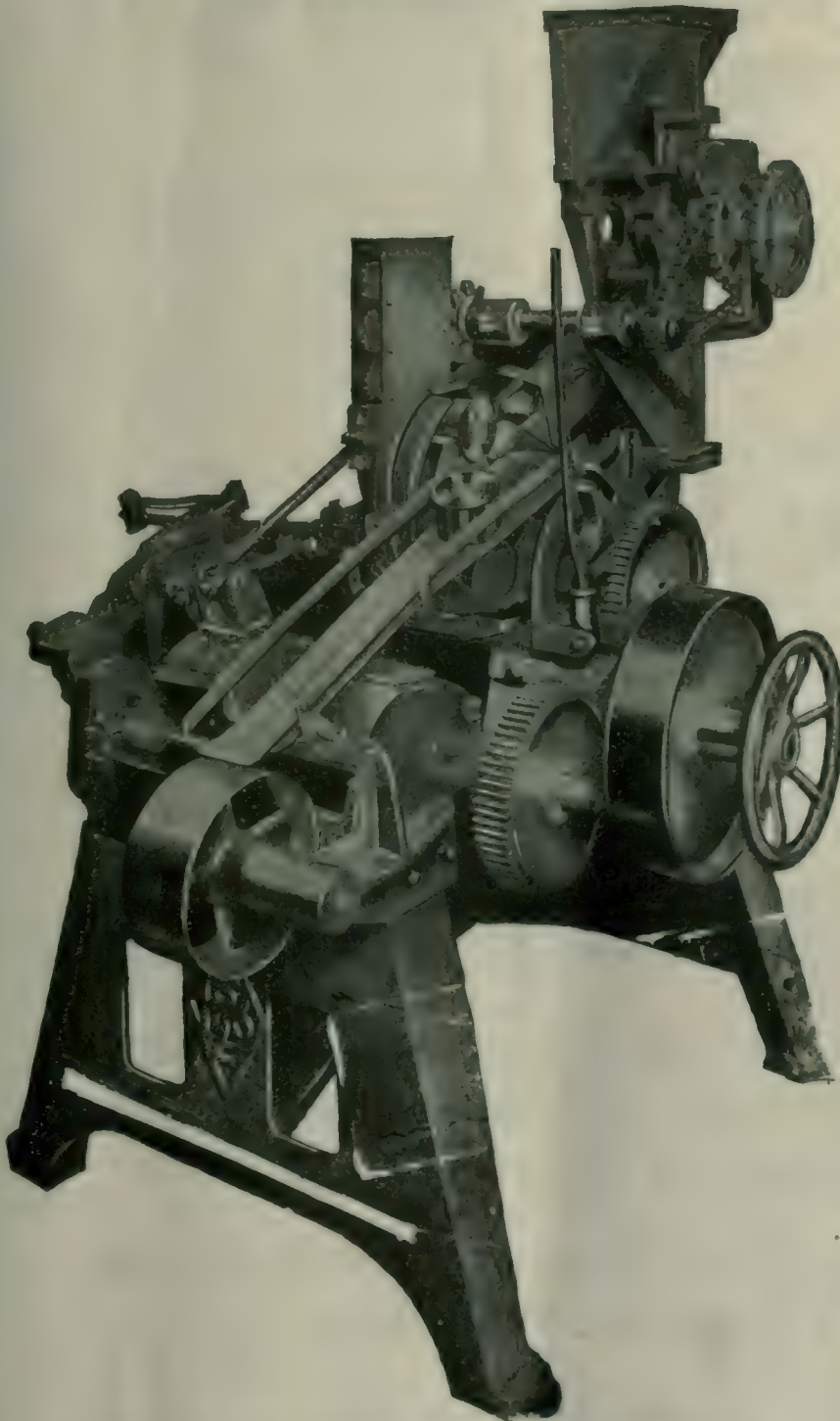
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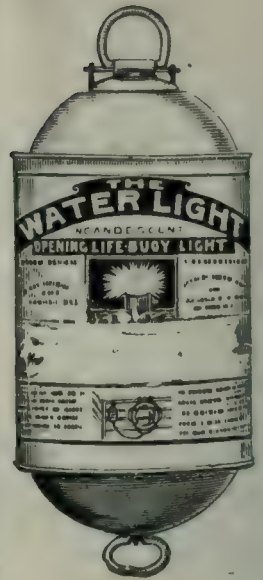
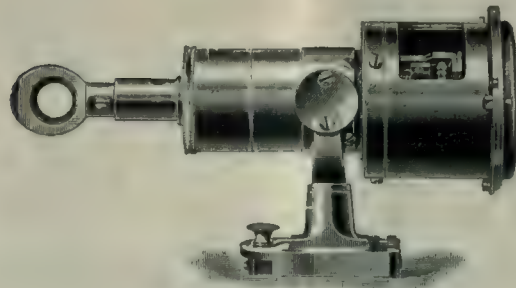
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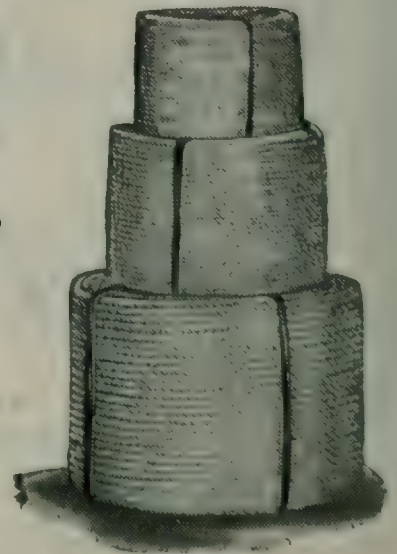
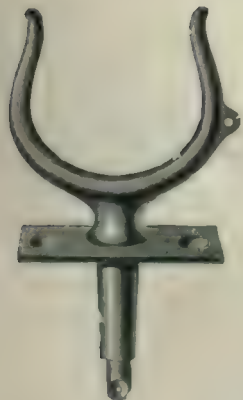
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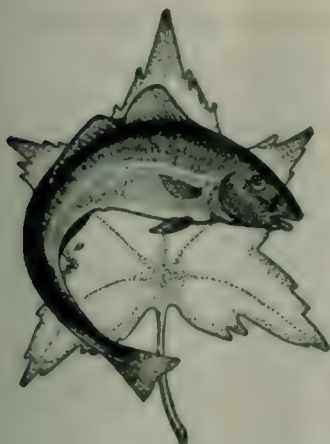
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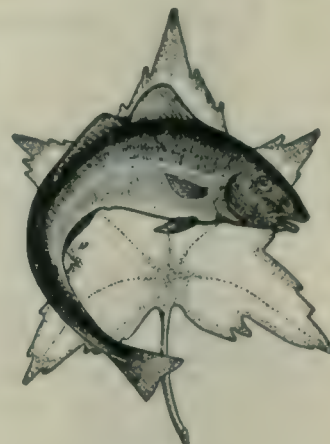
PULP AND PAPER MACHINERY

EDITORIAL

JULY 1920



FREDERICK WILLIAM WALLACE
Editor



THE PICKLED FISH INSPECTION ACT.

Amendments to the Fish Inspection Act of 1914, which passed the House the day before prorogation, will be greatly appreciated by fishing interests. The outstanding features of the new Act is that it makes compulsory the putting up of pickled herring, alewives, mackerel and salmon, other than mild cured, according to provisions laid down as to packing, grading, standard of container and inspection, whereas the original act of 1914 made such provisions optional.

The new Act becomes operative on the Pacific Coast on the first day of November next, while on the Atlantic coast it will be April 1, 1921, before it will become effective. Following these dates an inspecting officer will have power to enter any premises, vessel or boat where he has reason to believe there are containers or fish subject to the provisions of the Act, or where fish is being cured or packed, or where containers are being made or stored, for the purpose of seeing that the terms of the Act and the regulations thereunder are being complied with.

Any container packed with fish which does not meet with requirements shall be held by the Inspector until the name of the maker is ascertained and properly affixed; and at the same time the maker is held liable to a penalty.

All fish with which the Act is concerned, imported into Canada must be packed in containers of similar character and quality and must have clearly marked the kind, grade and weight of fish contained, and the country of origin. When importation is merely transitory shipment it is only necessary that the country of origin be marked.

The provisions of the Act may be extended by Order-in-Council to any other kinds of fish, whether pickled or otherwise, with the exceptions of fish packed in cans or other hermetically sealed containers.

Legislation making it compulsory to pack, grade and mark fish according to standard has been sought in many quarters of the fishing industry for years. Its urgency is brought home by the fact that Canadian pickled fish is not of as high a standard as the product of other countries less fortunately equipped and hence is rather a reflection upon the industry

generally. In some quarters, too, there has been a feeling that compulsory inspection should extend to other branches of the industry.

HONOLULU PACIFIC FISHERIES CONGRESS.

The interest of the Canadian Fisheries Association in scientific matters pertaining to the fishing industries of Canada is not confined to passing resolutions of suggestion and commendation and letting it go at that. Nor is the interest of the organization in fishery science merely superficial. The Executive fully realize the value to the commercial fisherman of the fishery research worker and his investigations.

A resolution was passed at the recent C.F.A. Convention in Vancouver whereby the Association expressed itself as cognizant of the importance of its being represented at such scientific meetings and congresses as may be held in connection with fishery research and investigation. The Pan-Pacific Fisheries Congress to be held in Honolulu in August, 1920, was regarded as a gathering at which the Canadian fishing industry should be represented, and the Association requested its Executive Council to devise ways and means for sending a scientific representative to the Congress.

Immediately after the Convention, steps were taken to carry out the object of the resolution, and we are pleased to announce that one of the scientific members of the C.F.A.—Dr. C. McLean Fraser, Professor of Biology at the University of British Columbia, and a well-known research worker in the Pacific fisheries—has been delegated to represent the Association and the fishing industry of Canada at the Honolulu Congress. The industry and the association are very much indebted to President E. W. Beatty, of the Canadian Pacific Railway and Mr. J. J. Harpell, Chairman of the C.F.A. Publicity Committee and publisher of "THE CANADIAN FISHERMAN" for their generosity in defraying the expenses of the delegation.

EXPRESS COMPANIES ASK FOR INCREASED RATES.

The Secretary of the C. F. A. has received a copy of the application made by the Express Traffic As-

sociation to the Dominion Board of Railway Commissioners asking for a rate increase of not less than forty per cent. of the tolls at present in effect. The Companies making the application are the American Railway Express, the British America Express, Canadian Express, Central Canada Express and Dominion Express. The date of the application is July 23rd, 1920.

It is claimed by the allied express companies that they are operating at a loss on the existing rates and if such is really the case we think their claim for an increase in rates is reasonable. But we further believe that such increases should be made upon commodities well able to stand it and not upon cheap food-stuffs such as fish. An increase of forty per cent. upon existing fish tariffs would kill the business.

The Secretary of the Canadian Fisheries Association would be glad to have the views of the trade upon the proposed increase in order that the C. F. A. Transportation Committee may know what course to pursue with regard to same.

EXIT "NAVAL SERVICE."

The Hon. C. C. Ballantyne, Minister of Marine and Fisheries and Naval Service, is to be congratulated for having segregated the Fisheries Department from that of the Naval Service. The recommendations of the Canadian Fisheries Association to that effect have evidently been considered and the Fisheries Department is now shifted over to the Marine Department. The future title of the fisheries administration is "Fisheries Branch, Department of Marine and Fisheries." Thus, at last, the Gilbertian farce of ruling the destinies of Canada's fisheries from the Naval Service, is done away with and the Fisheries are now coupled with the Marine.

With the change also came a change in administrative heads. The Deputy Minister of Marine, Alex. Johnston, also becomes Deputy Minister of Fisheries in place of G. J. Desbarats. The Superintendent of Fisheries, W. A. Found, has been appointed Assistant Deputy Minister of Fisheries. This is a step in the right direction and we feel pleased that the change has been made, but we are still desirous of seeing what we and the C.F.A. have long advocated, viz.: a separate Department of Fisheries and a Deputy Minister of Fisheries.

Deputy Minister Johnston is one of the brightest officials in the Civil Service. He hails from a fishing country, Cape Breton, and at one time represented his county in the House of Commons. He should know something about the fisheries and have a clear understanding of their possibilities and the necessary aids to develop them. Assistant Deputy Minister Found has received the recognition he deserves as a very capable, impartial and zealous officer.

We will miss "dear old Naval Service" from the bulletins and letterheads, but we must confess to thoughts of "Pinafore" every time we saw the legend. The Minister of the Naval Service issuing instructions re the proper way to pack herring or smoke haddies savored of Sir Joseph Porter, K.C.B., and no doubt, Mr. Ballantyne, who is Scotch and dignified enough to balk at being the victim of such an absurdity, made up his mind to have the thing changed.

No more will the ambitious officers of the Canadian Navy be twitted by their English brethren as the "Navy which issued a book on 'Fish, and How to

Cook it.' " It was a sad day for the Canucks when one of the Naval Service Department's Fish Cook Books strayed into the hands of a British Naval officer. Well, it's all changed now—thank goodness!

DEPARTMENT OF MARINE AND FISHERIES.

Notes on Fishing Results for June.

The weather was generally favorable for fishing on the Atlantic, and operations proceeded without hindrance throughout the month. Certain kinds of fish were scarce, however, on the usual fishing grounds.

The catch of cod and haddock amounted to 395,800 cwts. against 377,800 for the same month last year. The quantity of cod was greater, but that of haddock was less. Hake and pollock were landed in greater quantities and gave an increase of 25,000 cwts.

The mackerel catch over all was disappointing; it amounted to 62,900 cwts. against 109,400 for June last year. While the quantity taken along the shores of Nova Scotia, Prince Edward Island and New Brunswick was almost 50 per cent less, the catch at the Magdalen Islands exceeded that of June last year by 40 per cent.

There were 24500 cwts. of sardines taken in the Bay of Fundy. This is an increase of 8000 cwts. but the demand being slack the fishery was not pushed vigorously.

The lobster catch was very good all over the coast. From November 15th to the end of June the catch amounted to 285,200 cwts. against 234,000 cwts. for the same period last year. The pack since the 1st of March is 136,359 cases against 116,110 cases.

Notwithstanding unfavorable weather on the Pacific the catches of salmon, halibut and pilehards were considerably greater than those for June last year. Good catches of spring salmon were secured in the Skeena and Bella Coola districts. Trolling off the west coast of Vancouver Island was much interrupted by bad weather.

The total value of the June catch for the whole of Canada at the point of landing was \$3,586,776 against \$3,019,258; an increase of \$567,518.

Four fishermen were lost by drowning on the Atlantic coast during the month.

GOVERNMENT PRIZES FOR ESSAYS ON THE CANADIAN FISHERIES

Prizes totalling \$250 are being offered by the Department of Fisheries to the school pupils who submit the best essays on "Why Canadians should eat more fish." Circulars have already been distributed to all parts of Canada, announcing the terms of the contest. Pupils who intend to participate have the advantage of the summer vacation in which to secure material, as they are not obliged to submit their contribution until October 31st.

In each province a prize of \$25.00 is being awarded to the pupil who submits the best essay, and an additional prize of \$25.00 is being awarded for the best essay from all quarters of the Dominion.

The competition which the Department instituted among pupils of domestic science schools throughout Canada, closes the last of June. A great number of contributions has been received, and many more are expected during the next few days.

The Value of Rearing Ponds and a Suggestion for their Widespread Use

By HENRY DOYLE.
(Director, C.F.A. British Columbia.)

In 1887 Col. Marshall McDonald, who later became U.S. Commissioner of Fisheries was Superintendent in charge of the Wytheville hatchery in Virginia. Speaking of the hatchery experiments in releasing trout in their fry stage as compared to holding them in retaining ponds until they became fingerlings, Col. McDonald said:—

"For several years in succession this stream was stocked with the fry of both the California and Eastern brook trout. The aggregate number planted was not much short of 100,000. No appreciable results followed from this work. In August, 1886, about 400 fingerling trout from 4 to 5 inches in length were released into the stream. During the ensuing fall and winter about 100 of these were captured at the head of a little fishway fed by the waste water discharged from the ponds. They had attained a length of 7 to 8 inches, and the brightness and clearness of their color were in marked contrast to the duller hues of the fish of same age in the ponds. An examination of the stream subsequently showed that the trout were still quite numerous in the stream in the vicinity of the hatchery."

"The important lesson to be drawn from these experiments is that in stocking streams infested by small predaceous fish we can only assure success by stocking with trout of sufficient size to dominate the water. Under the circumstances indicated experience shows that several hundred yearling trout are sufficient to stock a stream presenting suitable habitat. On the other hand, we can rarely expect success in stocking such waters with any number of the fry, however great. It may be assumed as a rule that a pair of yearling trout are fully the equivalent of several thousand fry in stocking streams."

In 1899 Mr. Cloudsley Rutter made an investigation of the seaward migration of quinnat salmon fry on the Sacramento river. He followed the young fish down the river and found that upon reaching the salt water of San Francisco Bay they did not at once pass out of the river, but remained for days in brackish water, going forward and backwards with the tide until they accustomed themselves to the brine impregnated waters in which they were to spend the next few years of their lives. As an experiment, Mr. Rutter transferred some of the fry direct from fresh to salt water, but found that the sudden transmission was fatal.

It may reasonably be supposed that many fry, whether the result of natural or artificial propagation, would not be able to maintain themselves in brackish water at tidal level, but would be carried by the currents into salt water, and would perish in consequence of the too sudden change. What the percentage of loss from this cause may be we have no present means of knowing, but it is not improbable that, next to the non-fertilization of eggs, the loss due to this change from a fresh to a salt water habitat is the heaviest which the young fish are subjected to.

In most fields of scientific research any discovery which gave promise of producing better results than that obtained from past experience, would be further

investigated and its value proven. It would appear that the success obtained by Col. McDonald and the discoveries of Mr. Rutter should have caused others to take immediate steps to determine by comparison whether retaining the young fish until their fingerling stage was superior to the old method of releasing them as fry. Especially should we have looked for such action in the artificial propagation of salmon since Col. McDonald's success was with trout, which is a member of the salmon genus. But 33 years have elapsed since Marshall McDonald made public his experience and 21 since Cloudsley Rutter's experiments and still—with few exceptions, and those of recent date—we have persisted in planting salmon in their fry stage. It is no compliment to these two painstaking investigators to speak well of their achievements, while making no effort to profit by their work, and it is all the more to our shame since the old methods we have used, and are still using, have never in any known instance produced one tenth of what Col. McDonald produced 33 years ago.

It is not contended that releasing salmon in their fry stages is without any noticeable results. There can be no doubt but that with some species at least, plantings of fry have produced mature fish. The Sacramento and Columbia rivers demonstrate this, and it might be as well to use these two cases to illustrate what has been done from planting salmon in the fry stage compared with what might have resulted had the fish been fingerlings when released.

In its prime, the Sacramento, combined with its tributaries, produced as a whole, 200,000 cases of a salmon pack. After hydraulic mining covered most of the spawning areas below Red Bluff with mud and silt, the McCloud tributary was the one which carried most of the remaining salmon runs. The pack at its lowest ebb was 2,281 cases and, since the other spawning beds were mostly eliminated, it is reasonable to assume that these 2,281 cases represented the McCloud's quota of the total for the whole river in the years when 200,000 case packs were obtainable.

To-day the take of the Sacramento river salmon would, if canned, produce a pack equal to its former greatness, and practically all of this is obtained from the fish which had their origin in the McCloud river sector. Thus it might with reason be claimed that through artificial propagation, and releasing the fish in their fry stage, the annual pack has been built up from 2,281 cases to 200,000 cases, or approximately 90 times as much as the McCloud sector originally produced.

This in itself is an excellent showing, but let us see how it compares with what might have been hoped for from keeping the fish until their fingerling stage and obtaining similar results to what Marshall McDonald obtained.

To fill 200,000 cases, at 70 lbs. of fish to the case, and with an average of 22 lbs. weight per fish, would require 636,000 salmon. In some years the hatchery output of fry ran over 100,000,000 and 636,000—if all were attributed to artificial propagation—would

represent a return of roughly *but two-thirds of one per cent*. This percentage, however, is undoubtedly huge since there was some natural propagation in those years, to which part of this increase is justly attributable.

Now had these 100,000,000 fish been retained until their fingerling stage before releasing them, and had Col. McDonald's 25 per cent average of mature fish been obtained, the result would have been equal to more than 7,800,000 cases! In other words the hatchery output of this one river would have produced a return of mature fish equal to the 1919 pack of the entire Pacific Coast!

The case of the Columbia river can be likened to one's right hand; the whole hand representing the main river; the fingers the upper tributaries such as the Snake, the Spokane, etc., and the thumb the Clackamas. In its prime this combined water shed produced 653,000 cases of canned salmon, of which the Clackamas cannot be credited with over one-fifth. To-day the upper tributaries are practically eliminated, owing to dams and irrigation ditches blocking access to the salmon, and it is from the Clackamas that the hatchery supply of eggs is obtained. To-day's take of fish is equal to the best years of the past, nearly all of which is attributable to the Clackamas. Thus that tributary shows a five-fold increase while the other sections show heavy decreases. Here again salmon released as fry are to be given credit for the result, but as in the Sacramento's case the percentage of return has been less than one per cent.

The Oregon State hatchery at Bonneville is retaining its salmon in rearing ponds until they attain the fingerling stage. Their success has been proven by the return of marked fish and they estimate the percentage of fish released as fingerling which returned as mature fish to be at least 5 per cent. This is only one-fifth of what Marshall McDonald secured from trout, but it is infinitely better than the best known results from fry plantings.

It is not to be expected that (for the present at least) any such quantity as 100,000,000 young salmon can be held in the rearing ponds of a single hatchery for sixteen to eighteen months. But it is a comparatively easy matter to build ponds of sufficient capacity for several million each, and one hundred such rearing ponds scattered along the coast from California to Behring Sea would produce enough fish to double the present annual pack. If such a system was put into effect in 1921 the total Pacific Coast pack of 1925 should be at least double that which can be expected for next season.

All of the foregoing refer to salmon such as the quinnat species, whose natural habits cause them to deposit their spawn in streams which follow direct in to the sea. How much greater results can therefore be expected from retaining sockeyes in rearing ponds since it is characteristic of them to remain at least one year in fresh water lakes—nature's own retaining ponds. Fry planting is a proven failure with the sockeye species. It has been tried as long, and with less success, than the quinnat species, the percentage of return being much under the two-thirds of 1 per cent which is the maximum credit in the case of the latter fry.

For 35 years planting sockeye fry have produced no appreciable results, but in 1914 Bonneville hatchery released fingerling sockeye which in 1918 returned as

mature fish. In 1915 Namu hatchery in British Columbia planted sockeye fry in natural retaining ponds in the stream which flows into Namu lake and results attributable to this planting were obtained in 1919. In the same year similar plantings were made in streams flowing into lakes in the lower Fraser watershed and this work also has proven a pronounced success. All of these undertakings were made independently, and with no knowledge of what the others were attempting. Except in the case of Bonneville no effort has been made to estimate the percentage of return secured, but this is only practical through a system of marking the fish before releasing them.

One result has been noticed, however, both with the quinnat and sockeye species. This is an increased weight for the artificially propagated fish as compared to those born under natural conditions. As first blush this does not appear creditable, but a like condition exists amongst wild and domesticated land and air animals, and why not also with fishes? Our domestic cattle through breeding have much surpassed in size their original forebears; the percheron breed of horse is over twice the size of the wild ass or zebra out of which the race was evolved; and our barnyard fowls are of larger structure than the jungle fowl of India from which their descent is credited.

The operators of the Sacramento river hatchery of early days claimed the average weight of their quinnat salmon was about 16 lbs. The present day average is approximately 22 lbs. A similar increase was noted on the Columbia after hatchery returns appeared, and recently Mr. Clanton, the Master Fish Warden stated still better results were expected from fish held until their fingerling stage. The average of the past few years has been 22 to 24 lbs. for mature fish, but those returning this season—thought to be salmon which spent sixteen to eighteen months in rearing ponds—will average 30 lbs. per fish in weight.

Mr. Clanton also found the Bonneville sockeyes, reared until their fingerling stage at that point, averaged considerably heavier than the sockeye salmon of Yes Bay, Alaska, where the eggs had been obtained. Individual fish went as heavy as 13 lbs. while the average was between 7 and 8 lbs., or nearly 50 per cent heavier than the parent stock. This weight question is therefore a very important factor in computing the relative merits of fry vs. fingerling plantings.

Up to the present hatchery efforts have practically been confined to the quinnat and sockeye species, but the cheaper grades have now attained a marketable importance that warrants the employment of artificial propagation with them as well. The need of this is all the greater since they frequent streams which can most easily be fished out, and already the progress toward extermination has advanced so far that no time should be lost in commencing this work.

The study of nature teaches us that once we disturb the natural order of animal life so as to provide the food requirements of mankind, a decrease in numbers of the species so attacked is bound to follow unless either its natural enemies are correspondingly reduced, or man offsets his depredation by supplementing Nature's efforts. In the case of our Pacific salmon the latter is the only course open to us.

The streams frequented by salmon are thousands in number, and they lie along our coast from California to the Arctic regions. With hardly an exception, they are already being exploited by our fishermen. Each

individual stream required artificial propagation to maintain its runs, and it is manifestly impossible for any government to accomplish this work. Therefore, the problem confronting us is to find ways and means of doing this ourselves, and the following is suggested as a feasible method.

Each government interested should for their respective fisheries establish numerous central hatcheries or egg collecting stations in locations easily accessible to those engaged in commercial fishing. These stations should be stocked to their utmost capacity with eggs of all species of salmon and the cost of securing eggs and operating the stations should be computed on the basis of so much per 1,000 eggs.

At the close of the fishing season it should be compulsory for each operator to furnish the Government authorities with particulars of the number of each species of salmon he had secured that season, and the stream or streams the fish were proceeding to when captured. This data would have to show details of what number of each species as proceeding to each individual stream. From their stations the government should then supply each operator sufficient eyed eggs to offset the number of fish he had secured, and it should be compulsory for said operator to receive such eggs, hatch them properly, and retain them in rearing ponds, erected on each of the streams which his commercial operations had depleted. For all eggs so supplied him he should be charged a sufficient sum per 1,000 to cover the government's cost in securing and caring for them, and the government should be furnished with the necessary authority to see that the operator conscientiously carried out the share of the work assigned to him.

Let us illustrate this by the following example: John Doe in the course of his fishing operations has secured 10,000 humpback salmon from a certain stream, and so advises the government. The latter estimates that, allowing for natural losses, it will take 200,000 eyed eggs to offset the depletion thus occasioned. Their cost of securing and holding these eggs at the station was \$1 per 1,000. They would therefore supply John Doe with 200,000 eyed eggs and charge him \$200 for same. They would then see that John Doe placed these eggs in gravelled boxes, or other suitable hatching device, and that he subsequently held the resultant young fish in rearing ponds until they reached the fingerling stage.

By such means the government would ultimately be at no expense for their share of maintaining our salmon fisheries, while the cost to the operators would be small in comparison to the benefits derived, and even his costs might to some extent be offset by reductions in the present tax of 4 cents per case on the canned packs obtained.

There, of course, are difficulties to be overcome, but these are not insurmountable. For example, trap and gill net caught fish cannot always be designated as the run to any particular stream or tributary streams. In such cases a proper division and re-stocking can only be estimated, at least until investigation shows the approximate percentage of the total each stream should receive under natural conditions if no commercial fishing intercepted the run of fish. Again, it would be unfair to compel an operator to assume the cost for all the eggs necessary to re-stock and maintain the streams in his vicinity if some of the fishermen or

trap operators were private individuals who sold their catches to outside parties. This difficulty could be overcome by raising the necessary revenue through a tax of so much per fish, such tax to be deducted from the actual fisherman by the operator when paying him for his catch. The collection of this could be handled in the same manner by which the government now collects the tax on luxuries.

In the case of large rivers on which several fish packing plants are established, it is obvious that individual efforts to maintain rearing ponds would not be feasible. Some modification of the plan could be devised to achieve the object aimed at, always bearing in mind that on such rivers each tributary should have its individual rearing ponds in order that the entire watershed shall have its runs maintained as nature intended they should be.

If such a system is inaugurated there must be thousands instead of hundreds of rearing ponds established. The expense would be comparatively small; it would be borne equally by all engaged in the industry; and future generations would have their share of this national asset. The farmer has to pay for the seed from which he obtains his crops; the live stock man pays for the feed by which he maintains his herd of cattle. It is not unfair to ask the fisherman to do likewise in his industry, since like the farmer and cattleman he will reap the benefits of the expenditure he is called upon to make. It will take from two to four or five years—according to the species—before he can harvest his crop, but if, like the farmer, he can produce many times the best return he could expect Nature unassisted to produce, it is surely an investment he is amply warranted in making.

THE LOBSTER FISHERIES

Lobster fishermen along the northeast shore of Nova Scotia have enjoyed a prosperous season. About the middle of June the price paid to fishermen soared as high as \$12.00 per hundred pounds. Owing to this unusual price one firm stopped packing. Fishermen declare that lobsters are just as plentiful as ever, although disinterested authorities have a contrary opinion.

While berried lobsters were reported to be very plentiful along the Arisay Coast in May, in June they were reported to be very scarce. The Fishery Overseer at Harbour Head, Antigonish County, finding a large number of lobsters entering Tracadie Harbour every fall, and apparently remaining there for the winter, has suggested that the harbour entrance be closed to make the place a natural breeding ground by putting on a close season in the harbour.

SASKATCHEWAN LAKE FISH FROZEN TO DEATH

The Fishery Overseer at Wadena Saskatchewan, reports that when the ice melted in Little Quill Lake, fish were piled up on the shore in drifts. The fishermen are at a loss to account for this heavy mortality, the only theory available being the firmness of the ice throughout the winter. In previous years the surface was rent by large cracks, but this year such was not the case.

this Act, and shall be clearly marked with the kind, grade and weight of fish they contain, and with the name of the country of origin. Provided, that when such fish are imported into Canada for exportation, it shall only be necessary that the container in which such fish are packed be marked with the name of the country of origin.

Disputes—Appeal.

"9. In case any dispute should arise between an inspecting officer and the packer, owner or other person who controls any container or fish with respect to the quality, size, condition, or marks of either container or fish, such packer, owner or other person may appeal to the Minister, who may order a re-inspection, and such re-inspection, if authorized, shall be final and conclusive. Provided, however, that there shall be no appeal in any case where the appellant is unable to satisfy the Minister that the identity of the container or fish with respect to which an appeal is desired has been carefully preserved.

Power to Enter and Search.

"10. Every inspecting officer appointed under the provisions of this Act shall have power to enter any premises, vessel or boat where he has reason to believe there are containers or fish subject to grading or inspection under the provisions of this Act, or of any regulations hereunder, or where fish is or has been cured or packed or containers made or stored, and to open any package or container which he has reason to believe contains fish, for the purpose of seeing that the provisions of this Act and of the regulations have been complied with.

Forfeiture and Seizure.

"1. (1) If any container packed with fish which is required by this Act or by any regulation to be marked is unmarked, such container and the fish therein shall be held by an inspector until the name of the maker is ascertained and marked thereon, and the maker shall be liable to the penalties provided for in sub-section 2 of this section.

False Marking, or Packing in Violation—Penalty.

"(2) Any person falsely marking any container packed with fish, or packing fish in violation of this Act or of the regulations, shall be liable on summary conviction to a fine not exceeding fifty dollars or to imprisonment for any term not exceeding thirty days, and for a second or any subsequent offence to a fine not exceeding one hundred dollars or to imprisonment for any term not exceeding sixty days.

Commencement of Act.

"12. This Act shall come into force, with respect to fish caught on the Pacific coast, on the first day of November, one thousand nine hundred and twenty, and, with respect to fish caught on the Atlantic coast, on the first day of April, one thousand nine hundred and twenty-one."

Notes on the Provisions of the Bill

Similar Bill Introduced Last Year.

1.—A similar Bill was introduced on March 28th, 1919, and was referred to the Select Standing Committee on Marine and Fisheries.

That Committee was unable to consider the Bill, as it did not come up until just before the closing time of the last meeting of the Committee. It, consequently, was not reported out of the Committee.

Existing Act.

2.—The Pickled Fish Inspection Act became effective May 1st, 1915. It applies to pickled herring, ale-

wives, mackerel and salmon and the packages in which they are marked.—See section 2.

It is not compulsory, but anyone desiring to put up fish for inspection can, under it, have their fish inspected free of cost and branded, if the package and contents comply with requirements.

It was hoped that educational work and good prices obtained for branded fish would result in general adoption of standard package, but progress has been too slow, and if a good name for our pickled fish is to be established, experience shows compulsory inspection the only workable course.

Number of Barrels Inspected Under Existing Act.

3.—The following is a summary of the pickled fish put up and inspected:

Year.	Total No. Barrels Packed.	No. Barrels Inspected.	No packers requesting Inspection.
1915	154,086	1,320	16
1916	113,758	7,213	73
1917	134,329	8,977	80
1918	197,288	16,667	103
1919	108,335	8,730	82

Inspection began in British Columbia in 1918, and of the above number, 3,997 barrels were inspected there in that year, but only 77 barrels in 1919.

Likely Reasons for Slow Progress.

4.—(a) Many coopers persist in making poor leaky barrels, which shortsighted packers buy on account of their cheapness.

(b) Abnormal demand for all pickled fish during the war, on account of shortage of supply from Europe, made a good market at remunerative prices for even inferior goods. Consequently, incentive to change methods was not great.

General Desire for Compulsory Use of Proper Packages and Grading of Fish.

5.—(1) Departmental officers are convinced in light of experience that satisfactory demand for our pickled fish, and particularly pickled herring, cannot be established unless purchasers are assured that product is up to standard.

(2) Those endeavoring to produce higher grade articles feel their efforts being largely nullified by great volume of inferior goods.

(3) The Canadian Fisheries Association, which embraces in its membership, representatives of all branches of the industry at its 1918 annual Convention unanimously passed a resolution urging that the use of proper barrels and grading be made compulsory.

(4) The Canada Food Board, when it was in existence, urged this course.

((5) The Commissioner of Fisheries for British Columbia urged this.

(6) Of 122 individual fishermen, coopers, packers, and dealers who were written to for their views, 117 would welcome compulsory grading and use of proper barrels.

Public Interest Demands Standard Product.

6.—Consumers of Canadian products are entitled to know before buying quality of article in sealed packages. What is in public interest is finally in producers' interest.

Fruit Inspection Compulsory.

While a barrel of pickled mackerel or herring costs usually two or three times as much as a barrel of apples, the latter must be up to standard and the purchaser assured of quality.

Existing Act and Bill Compared.

7.—Under existing Act a packer desiring to have his fish inspected notified an Inspector, who visits his curing place, and if package and fish meet requirements, package is branded.

This would not be practicable under compulsory grading, owing to our very extensive coast line. It would involve an army of officers to carry it out.

Method Under Bill.

This Bill provides for a system of inspection similar to that applied to fruit.

Proper Barrels Must be Made.

Coopers will be required to turn out proper barrels.—See Section 7.

Grading and Packing According to Standards.

Packers will be compelled to cure and grade their fish according to standards set out in the regulations, and they will be required to themselves mark on the barrels the class of product they contain.—Sub-section 2, section 7.

Inspectors may examine the barrels and fish at any time after they are packed and at any convenient place, to ascertain whether they are correctly designated by the marks on the package. The details of inspection to be decided by regulation.—See sub-section 6.

As all pickled fish pass through comparatively few channels, this will enable an inspection of the whole product to be made by a comparatively few inspectors. It is not anticipated that the expenditure under the proposed method on both costs will ever exceed the \$15,000 provided for such inspection in the Estimates for this year.

When New Act Should Become Effective.

8.—In order that the public may have sufficient notice, the new Act should not become effective on the Pacific coast until next November, the herring fishery there being practically confined to the winter season, and on the Atlantic coast until April, 1921.—See section 12.



A Plain Talk to Nova Scotia Fishermen

By Margaret McLaren.



The main reason why I am writing this article, is because of a great deal of "satisfactory dissatisfaction" among the fishermen around Halifax Co., and vicinity.

And this very frame of mind of theirs will prove beneficial because it will broaden through its very denials, into an understanding that will make them see that many things can be done for their betterment, even if the men who are trying to develop the fisheries of Canada, do not go out upon the sea to tackle the question of broadening opportunity for the fisheries, by laying hold of the line, so to speak. There is much talk of technical college for our fishermen, and this idea has been scouted as being merely a getter of "soft jobs", for some favored persons. And I am going to enumerate all that has been said, "AGIN the idea," and afterwards to start something in its favor.

Without wishing to be facetious, I may say that now is the time that women are butting in everywhere, and as the men are encouraging them to "butt", in all other directions and ventures, surely no fisherman will deny me the privilege of entering their company if I wish to do so. Now for the college proposition. The Government wants to help to develop the fisheries, because the gentlemen composing same know full well that the fisheries is the goose that lays the golden eggs for Canada.

But a college of technique must of necessity be situated in one fixed place. Not very many of our fishing folk could incur the expense of attending it, and its upkeep and installation would mean a lot of extra money to a country already burdened by an enormous war debt.

But, talk as they will our fishermen need instruction in the curing of fish, as well as to get a line on the selling of it. Now, in all trades, perfection brings a greater reward than would things half done. Bakers are wrapping their loaves, many kinds of food are cleanly and even elegantly done up in attractive car-

tons, but fish! Oh, most of that is slapped around any old way, dragged about on wharves, thrown round in boats, and laid out on ice in unsanitary markets, etc., unadvertised and everything else done that can be, to retard its sale. Then along come the mackerel scouts and they can't locate the fish, and mackerel are scarce, and a cargo of fresh fish, forty thousand pounds of the most beautiful and nourishing food in all the world came to Canso, and could not obtain a market. Therefore it was dumped into the fertilizer plant, and its captors amazed and disgruntled, as well as discouraged, want to know if they had a technical college, if this fish would have sold?

Now, Messrs. Fishermen, you all know how to CATCH fish. Do not get angry if this Government appoints a man with knowledge of YOU, and of what you DO know, and a knowledge of HOW to show you the things HE knows and you do not.

To come and lecture to you, and to show you how to secure your catch so as there will be no repetition of the fearful waste at Canso recently. And very large fishing vessels can afford wireless so as to communicate with an agent on shore and have their cargoes disposal arranged for, before the ships get in.

And that little individual bounty, what good did it do? Loaned to the fishermen in a thorough business like manner it would have meant better equipment.

But, as the farmers and other workers of Canada are getting together politically, and wish to see representatives of their own in parliament, what reason is there that the fishermen do not do likewise?

In conclusion I would say that the consumer is one of the real factors in the fishing business, and a campaign ought to be started beginning in the public schools and going through the press, chiefly in the women's journals, to teach women how to be benefited physically, mentally and financially, by using all the fish possible.

And now is the time to begin.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

Echoes of The Convention

The indications of a successful convention are the lasting results of a Convention. The C.F.A. Convention, which was held in Vancouver on June 3rd, 4th, and 5th last, has been talked about more than any other convention held in Vancouver. Not only have the members themselves been talking about how successful it was, but those outside of the industry speak of it. To the mind of the publicity man, perhaps this is the strongest evidence that the Convention was a striking success. There are times when you have to wait for results of resolutions passed at conventions, but in this instance, results have been happening ever since the Convention adjourned. First, after the adjournment on Saturday the 5th, on Monday the 7th some of the Government officials of the Fishery Department of the Dominion paid a visit to the Fishery Commission in Bonneville, Oregon, to look over the rearing ponds, and without doubt direct results of this visit will be shown at an early date. Before the month is hardly over, the Canadian Fisheries Association is sending a delegate to take part in the Pacific Scientific Congress, which will be held in Honolulu during August. The Fisheries College for British Columbia is a live subject and without doubt some decided action will be taken in this connection at an early date. The public in general took particular notice of the happenings at the Convention, and mentioned it to their friends who are engaged in the industry. Newspapers all over the country gave space to some of the happenings, and as a result letters have been received by the Vancouver Branch asking for information regarding the industry, some of the correspondents referring to their having seen accounts of the Convention in the newspapers in their town. The Vancouver branch will not allow the interest in the Convention to drop, but will be taking up important matters in connection with the industry at an early date. Another big thing in connection with the Convention was the large addition to the membership of the association. The Vancouver branch has a good lead now and proposes to keep to the front in membership.

President A. L. Hager of the Canadian Fisheries Association Sends the Story of the Convention To Those Who Could Not Attend.

Through the courtesy of President Hager, many of the members of the Association who were unable to attend received full accounts of the Convention. President Hager had his office staff busy for a couple of weeks clipping the full account of the Convention from the different Vancouver daily papers. It took upwards of fifty papers to make up a full set of these clippings, but the many letters of thanks which were received in appreciation fully repaid the labor which was expended in getting them together. One thing is assured, and that is that anything that is of interest to the industry will certainly reach the members of the C.F.A. as the new president is right on the job.

Canadian Fisherman Convention Number is Being Sought for by the Industry in General.

The Convention Number of the CANADIAN FISHERMAN is being eagerly sought after by many, as the papers of the Convention created a great amount of interest. The Secretary of the Vancouver Branch has many requests for this particular number from those interested in the industry in the United States, as well as yearly subscriptions.

Latest Copies of the Proposed Sockeye Treaty and Draft of Fisheries Treaty Distributed by Vancouver Branch of the C. F. A.

The Vancouver branch of the Canadian Fisheries Association recently had copies of the proposed Sockeye Treaty and draft of the treaty concerning "Port Privileges of the Fishing Vessels, Lobster Fishing, Halibut Fishing, and Tariff on Fresh Fish," printed and delivered to each of the members. These copies were both of the latest wording, and were of interest to all engaged in the industry.

THE CANNED SALMON MARKET

Uncertain. This expresses the condition of the canned salmon market in general. Both in Canada and the United States. There will be nothing sure as

to the size of the pack before the middle of August. By that time the run on the Naas and Skeena will be nearly over, and the sockeyes on the Fraser will be pretty well along. Of course, there are some who are willing to estimate the amount of the packs of the different varieties; but in general the feeling of uncertainty causes most of those in the industry to withhold any decided expressions of opinion.

Sockeye prices are firming all the time. The price mostly quoted at this writing is \$21.00, although some are talking \$21.50. Pinks (spot) are being priced at \$7.00 and \$7.50, chums (spot) at \$5.00 and \$5.25.

There are about 30,000 spot pinks in British Columbia, and without doubt inside of the next sixty days there will be a gradual firming up of prices all round.

The United States quotations are not to be considered at all a criterion of what the prices there will be. It looks as though some of the early quotations on the other side of the line are given out for a purpose with the idea of higher prices when the new pack comes on the market, and when the results of this season's operations are known. Although it is reported that some of the canneries in different sections of Alaska are endeavoring to secure new cans after filling up cans they had on hand, which they planned would be all they would use, it is quite doubtful if they can secure additional cans at this late date.

Regarding the conditions in the different districts in British Columbia, the following will give an idea up to the present time, July 15:

Fraser River: A little early to say anything at all, but prospects look much better than they did last year at this time. Some boats have averaged 20 fish to a boat for a night.

West Coast of Vancouver Island: This year has been a poor year, compared with 1918. The first part of June there was very bad weather, and as a result the last part of the month the fish were 20 or 30 miles off shore, and this meant bank fishing for the men. With heavy fogs during all the last part of the month there was nothing done, with the result the tonnage is much less from that district than at the same time last year.

Trap Fishing: The traps on the Canadian side are below last year, but the American traps are fair. This applies to Southern B.C.

Gulf of Georgia and Campbell River Districts: During the first week in July there was a good run of blue backs, and this is keeping up.

Alert Bay, Rivers Inlet and Smith's Inlet: These districts are having a good run of sockeyes, and prospects, although nothing exceptional, are good for a fair pack in these localities.

Outside Districts: The pink and chum pack in these districts will (it is estimated) be from 150,000 to 200,000 cases less than in 1919. It is early to give anything accurate at the present time.

Skeena River: The season so far has been disappointing, although another fifteen days may make a different story.

Naas River: Not at all pleasing so far, and it looks like a poor season.

Springs in Northern British Columbia have been far below the usual quantity, and unless the North Island fish show up well, 1920 will be way behind 1919.

BRITISH COLUMBIA HALIBUT

There is still a shortage of cars at Prince Rupert, and just now Seattle is experiencing the same difficulty. This difficulty is not as bad as it would be if large trips were arriving instead of the smaller trips that are coming in. There are lots of small trips coming in, but no large ones have arrived for some time past. The weather has been good on Hecate Straits for the past three weeks.

Prices have ruled high at Prince Rupert for this season of the year averaging 12c to 13c. The lowest was 10c and the highest 17c.

Many trips have arrived at Vancouver, and the Canadian Fishing Co. have been able to accept everything that has been offered them, as their large steamers are still tied up. This Company have also been receiving large quantities of halibut and salmon from the West Coast of Vancouver Island, and points all along the coast, where they have their stations.

The Canadian Fish & Cold Storage Co., Ltd., Vancouver branch, had a few trips in June, but the most of their shipments arrive from Prince Rupert, from their headquarters.

The London Fish Company are receiving regular shipments from Prince Rupert.

VANCOUVER WHOLESALE FRESH FISH MARKET.

Halibut has been quite plentiful for some time past. The prices have ranged from 12c for chickens to 16c for mediums.

Salmon have been arriving in fair quantities, and just now (July 15) the fresh sockeye is coming on the market. They are selling in the round at 18c. per lb., and dressed heads on at 20c. per lb. Springs are bringing 20c. per lb. dressed heads on. The run of salmon on the Fraser is better than was expected for this season of the year.

Soles will be off the market as far as the local caught variety is concerned as most of the fishermen will be fishing salmon.

Smelts are arriving in good quantities, and quite a few are being frozen at the present time. The price is 7 to 9c. per lb.

Cod from the local fishermen are scarce at present, and will continue so for some time to come, as most of the men will be out after salmon. What few local fish are arriving are bringing about 12c. per lb.

SOCKEYE RUN IMPROVING.

From Wadhams, District No. 2, British Columbia. A report on July 10th stated that the sockeye run had been satisfactory the preceding week. The run is improving and fishermen predict a big year. Weather conditions have been excellent and if it stays that way for the remainder of the season canneries should put up a big pack.

Smith's Inlet is even better than River's Inlet; one boat having delivered over 1,700 fish (sockeye) in ten days.

SALMON NOTES.

The report comes from Wachame, District No. 2, British Columbia, that all the cannery are ahead of last year's pack. Sockeye are reported unusually large this year, averaging a fraction over ten to the case as against thirteen to the case for last season.

White springs are reported plentiful in District No. 3, British Columbia, but there is no great demand yet for this variety.

FEWER SALMON CANNERIES OPERATING

On the Fraser River (July 15th) 1015 gill net licenses have been issued as against 1315 at the same time last year. (The following figures show the number of licenses issued by the fishery department for 1920, up to the present writing: Canneries 61, Trap nets 19, purse seines 113, 43 drag seines, 3,812 gill nets, 1,397 trolling. The trolling licenses are distributed as follow (whites) 592; (Indians) 301; (Japanese) 486; gill nets (whites) 223; (Japanese) 874; (Indians) 52.

The gill net figures given above are for districts numbered one and three. No. 2 district 2,663 for 1920 as against 2,483 for 1919.

During the 1919-1920 season there were 82 cannery licenses issued, 20 trap net licenses, 139 purse seine, 102 drag seine, 4,592 gill net, and 2,260 trolling licenses.

As there are many purse seines used in the fishing for fall fish and it is necessary to put in applications before any given period this year, there is every probability of more of this class of licenses being issued.

It will be noted that there are 21 canneries less than were operating last year. It may be possible that one or two more may operate for Fall fish, but this is merely surmise.

MR. W. A. FOUND ARRIVES ON THE PACIFIC COAST.

Mr. W. A. Found, Assistant Deputy Minister of Fisheries arrived in on July 11th. His first visit of inspection will be at the Dominion Biological Station at Departure Bay on Vancouver Island, which is in charge of Dr. C. McLean Fraser. Upon his return to Vancouver, Mr. Found will stop for a day or two in the city then will go North on a further trip of inspection later returning to Vancouver. It is expected that many matters of importance to the Pacific Coast Fisheries will be taken up with Mr. Found before his return to Ottawa.

COMPANY FORMED TO OPERATE PLANT AT KNIGHT INLET.

The B. C. Coast Fisheries, Ltd., composed of returned men, mostly of New Westminster, B.C., has recently been formed with a capitalization of \$50,000.00. Assisted by a grant from the Provincial government the new company is undertaking ambitious plans in their new undertaking. The officers of the Company are President, Capt. C. F. Macaulay, one of the executive of the New Westminster G.W.V.A., First Vice-President, Alfred Monk, who has spent all his life in the fishing business, son of the late Martin Monk, Secretary Treasurer, Mr. Herbert Fox, formerly Secretary Treasurer of the New Westminster G.W.V.A.

The company already have a wharf under construction on their new location on Gilford Island, in Knight Inlet. They also propose to build a cold storage, and warehouse, and will establish a store and have an ice plant. The idea is to make this a station for the deep sea fishermen, where they may sell their fish, and outfitted for their trips. It is proposed to have a supply of bait on hand at all times for the fishing boats. It is hoped to have the plant in operation by August.

ANOTHER NEW COMPANY OPERATING.

Captain Lambert Carson, who has a fishing station on Knight Inlet, in company with Mr. Albert Weinberg, formerly of the London Fish Company, have opened up a wholesale fish warehouse on the Gore Ave, Wharf, Vancouver, under the name of the Imperial Fish Company. They are handling salmon principally.

TRANSPLANTING SPRING SALMON

The Department of Marine and Fisheries, Ottawa, in co-operation with the United States Bureau of Fisheries, is continuing experimental work with a view to establishing the spring salmon of the Pacific coast in Lake Ontario and the St. Lawrence River. Work was begun last season, and the first transfers of eggs consisted of 4,000 eyed spring salmon which were shipped from the Harrison lake hatchery, on the Fraser River, to the Thurlow hatchery, Lake Ontario. In 1919, spring salmon eggs were also transferred by the United States from one of their Pacific coast hatcheries to the hatchery at Cape Vincent, New York State, which is also on Lake Ontario.

In the continuation of this experiment, a shipment of 450,000 eyed spring salmon eggs was recently received from Harrison hatchery, and laid down in splendid condition at the Thurlow hatchery.

The spring salmon is the largest of all varieties, and is second to none in its edible qualities. Its adaptability to changed conditions is demonstrated by the success which has followed its planting in New Zealand waters, where it is now firmly established. It is persistent in its ascent to rivers to spawn, and has been taken in Yukon river at the foot of Lake Bennett, a distance of more than 2,800 miles from salt water.

The fry resulting from the transfer of eggs from Pacific coast to Lake Ontario will be distributed to the most suitable areas of Lake Ontario and tributary waters to the mutual benefit of both United States and Canada.

PUGET SOUND PURSE SEINERS.

The report from Puget Sound is that the purse seiners are going to California for the tuna fishing season there. This decision was arrived at when the pink and chum salmon market looked like poor picking for the fishermen in British Columbia waters for the coming season.

In British Columbia the fear has been that the purse seiners from the States would come, under the "open fishing policy" and make a big clean up not only in cash but also in the fish. There is no doubt that if a large number of purse seine boats were to operate in the British Columbia waters for a couple of seasons, the fall fish run would be a thing of the past. For this reason it is good news to hear that the decision by this class of fishermen has been to go South for this season.

GASOLINE SHORTAGE AFFECTING PUGET SOUND.

Owing to the gasoline shortage in the states quite a few fishing boats have been calling at Vancouver for fuel supply, but have been unable to get it here either, as the local industry has to be taken care of first. The same condition applies to Prince Rupert and Ketchikan where the same serious conditions exist. New devices are being used to enable boats to use mixtures of coal oil and distillate, or coal oil and gasoline. Some of these attachments are meeting with good success it is reported.

The Wallace Fisheries, Limited, are not operating their cannery on Smith's Inlet this year. All their fish that are caught in Smith's Inlet are being canned at their River's Inlet cannery. It has not been decided yet as to whether they will operate their Kildonan Cannery or not.

Artificial Propagation of Sturgeon

Part I. Review of Sturgeon Culture in the United States



By GLEN C. LEACH.

Assistant in Charge Division of Fish Culture, U. S.
Bureau of Fisheries.

A number of attempts have been made in the United States at various times to propagate the sturgeon in the artificial manipulation of the eggs, but in every instance they have been rendered practically null by certain unusually persistent difficulties. An account of the efforts made may be of interest and value, particularly in view of the fact, as appears from the accompanying paper of Prof. N. A. Borodin, formerly connected with the Russian department of agriculture, that most of these obstacles were overcome in the course of some experimental work performed under his direction as chief specialist in fish culture in that department.

The first attempt at sturgeon propagation by a representative of the United States Government was in 1888 at Delaware City, Del., in the course of an investigation of the sturgeon fishery by Dr. John A. Ryder (Bulletin, U. S. Fish Commission, 1888), but experiments along that line had been conducted by Seth Green at New Hamburg, N. Y., as early as 1875, and were described by him in his book, entitled "Fish Hatching and Fish Catching," published at Rochester in 1879.

The eggs for the experiment at Delaware City were obtained from fish landed for the market. A number of such fish were examined, but of the various lots of eggs secured only one small lot was successfully hatched. In this instance they were taken by opening up the female fish, and after fertilization had been accomplished by the application of milt secured in the customary manner, the eggs were spread in a single layer over the cheesecloth bottoms of shallow boxes and anchored in a small sluiceway where there was a constant current of water.

The same drawbacks—viz., difficulty in finding ripe eggs and milt at the same time, imperfect aeration of the eggs during the incubation period, and the unusual tendency of the eggs to develop fungus—were again encountered in the course of a second attempt to propagate sturgeon at Delaware City by Dr. Bashford Dean in 1893. The work of that year disclosed the feasibility of using as a fertilizing medium milt secured by the removal of testes from male fish which were not sufficiently matured to void the secretion by the application of external pressure. The milt was separated from the cut testes by straining through a coarse cloth and proved just as effective as that taken from live fish, even after being held for several minutes in the rubber-bulb container. In an effort to overcome past troubles, the style of hatching apparatus was changed. The eggs were spread evenly under water on shallow trays in boxes whose sides and bottoms were covered with metal gauze. The necessity for quick handling soon became apparent, as the viscid nature of the eggs causes them to cling so firmly to any surface with which they came in contact that they are invariably injured in the attempt

to loosen them, and it was found that if not placed on the trays within 10 or 15 minutes after being fertilized they would form into a glue-like mass, which speedily became compact and hard. After allowing sufficient time for the eggs to become firmly attached, the trays containing them were fitted into the boxes and anchored in various places in the river bed.

By the end of the second day thereafter the eggs in the boxes, which had been moored in marginal waters having a sluggish current and carrying much silt, were found to be entirely enveloped in fungus and dead. Those placed where the water current was strong and comparatively free from sediment had sustained a loss of 60 per cent. by the close of the fifth day from the same cause, while those which had been installed in strong current in salt water showed practically no fungoid growth and were hatched in good condition.

In the spring of 1890 Frank N. Clark, superintendent of the Northville (Mich.) station, made preparations for a collection of sturgeon eggs at Fox Island, Mich., and under his direction 142 female and 32 male fish were examined between May 26 and June 14. Examination showed that 23 of the females had already spawned, 98 were very immature, the eggs in 6 were nearly ripe, and 5 were in spawning condition. Of the males 21 were hard, 2 almost mature, and 9 entirely so. In all, 20,000 eggs were secured and fertilized by cutting open and squeezing the milt sacs after moistening them with water. Much difficulty was experienced from adhesion, three hours of constant stirring being required to break up and separate the bunches of eggs. Ninety-five per cent. of them were developed to the eyed stage, but shortly afterwards a growth of fungus began spreading in the floating boxes in which they were being incubated, and, as a result, very few of the eggs were hatched. Had it been possible to incubate them in whitefish jars it is estimated that at least 85 per cent. would have been saved.

In the course of experimental work conducted in 1901 on the Missisquoi and Lamoille Rivers, tributary to Lake Champlain, efforts were made to hold green sturgeon in artificial inclosures for ripening. These efforts proved utterly futile, as in every instance the eggs caked together in a hard mass and development was arrested. Notwithstanding the great difficulty experienced in securing ripe eggs and milt together, 1,500,000 eggs were taken and fertilized, and their viscosity was effectively overcome by the method that is employed for the separation of pike-perch eggs. They were then successfully hatched in McDonald jars, the incubation period being about six days in a water temperature of 65 deg. F. The fish from which they were secured were taken especially for the work, and their violent struggles when caught frequently resulted in the loss of many of their eggs. Such losses were un-

avoidable, as it was impossible to distinguish a ripe female only when the eggs ran from it after it was taken from the water.

In 1911 experimental sturgeon propagation was undertaken in Minnesota in the Lake of the Woods region. In advance of the season's run of fish an inclosure large enough to hold 30 adult sturgeon was constructed in Rainy River, and a hatching apparatus of sufficient capacity to accommodate 3,000,000 eggs and fry was set up in a convenient building. During the spring 16 sturgeon were captured in a pound net and transferred to the pen. Though held for several months under apparently favorable conditions, they failed to mature, and in the following October they were released without having produced any eggs. Another trial was made in the following year with the same results.

From the observations made, it was concluded that sturgeon do not spawn until the water has attained a temperature of 60 deg. F.; that the eggs do not ripen in fish held in confinement; and that unless nearly ripe males are available when the eggs are taken no results can be expected. The spawning season at the various grounds has always been short, seldom exceeding three or four days. It is believed that jars similar to those used in the propagation of whitefish and pike perch are the most suitable form of equipment for the development of sturgeon eggs.

Part II. Artificial Propagation of Sturgeon in Russia.

By NICHOLAS A. BORODIN,

Every fish-culturist knows how difficult it has been to secure any genuine success in the artificial propagation of any species of sturgeon of the genus *Acipenser*. There must be acknowledged almost complete failure in both America and Europe as far as practical results go. One drawback has been the difficulty of keeping sturgeon eggs alive and sound, owing to their liability to be attacked and killed by *Saprolegnia* and other kinds of fungus. Yet another and very serious matter has been the scarcity of sturgeon in the rivers and lakes; in fact, these fish in many waters have become practically exterminated, and there has been no possibility of securing ripe eggs. While America and western Europe have lost most of their sturgeon supplies, Russia still remains rich in sturgeons, especially the rivers emptying into the Caspian Sea—the Volga, the Kura, and the Ural. Even in these waters, however, there has occurred positive diminution in the number of sturgeon, and it is the general belief that, in order to prevent the entire extermination of these fish, it is quite necessary to resort to artificial propagation on a large scale.

Just prior to the outbreak of the war the central administration of the fisheries in Russia received a special appropriation for sturgeon propagation. Three of the commercial species were selected for attention, namely, *Acipenser ruthenus*, a small fish living in the Volga; and *A. guldenstadtii*, a Russian sturgeon and *A. stellatus*, or starry sturgeon, both living in the Caspian Sea and ascending the Volga, Kura, and Ural Rivers in spring. Temporary stations for the propagation of *A. ruthenus* were established and operated in the Volga in 1913, 1914, and 1915; one station for the propagation of *A. guldenstadtii* was erected on the Ural in 1915, and another on the Kura in 1914, for handling both the starry and the Russian sturgeons.

There are not at hand the exact data on the work accomplished as regards the number of eggs hatched and fry planted, but the figures for *A. ruthenus* run into tens of thousands and for *A. stellatus* and *A. guldenstadtii* into several hundreds of thousands. Most of the fry were planted several days after hatching, but a considerable number of fry of the Russian sturgeon were reared for several months, and some specimens were carried in an aquarium for five or six months, until they became too large for their quarters.

There have been some interesting developments in sturgeon propagation in Russia in the past few years, and I will try to describe the methods employed.

Two of the most important deductions from the investigations made during the experimental work are that sturgeon eggs become ripe and suitable for impregnation only when the male and female fish are kept together in the same pond or reservoir, and that the spawning act takes place probably only at night. These two observations explain why it has always been very difficult to get ripe eggs from sturgeons caught during daytime or kept in ponds or inclosure with the male and female fish in separate compartments.

In our experiments, specimens of *A. ruthenus* have been held in large ponds, and their eggs have become ripe. Russian sturgeon have been retained in a reservoir about 32 feet long, 11 feet wide, and 6 feet deep, supplied with a current of water pumped directly from the Ural River. One night these fish spawned, and two days later there were found in the mud at the bottom of the pond thousands of eggs. Some of these fish hatched into healthy fry, but, as is always the case under natural conditions, most of them had not been fertilized, and therefore they perished.

With regard to artificial propagation of sturgeon, as elaborated by Russian fish-culturists in the latest work, the methods have been as follows: As the eggs flow from the female sturgeon they have a tendency to become united into a glutinous mass, which must at once be prevented. We received good results by stripping the eggs into a wire screen, washing them thoroughly with river water, and then putting them in a tin pan and fertilizing them with milt diluted with water. Several minutes later, before the eggs had become sticky, we again washed them thoroughly with river water, which at this time in the Ural and Kura Rivers is very turbid and of a yellow color, because of the enormous quantity of clay and sand in suspension. By such use of muddy river water analogous to the employment of swamp muck or of starch for overcoming the adhesiveness of pike-perch eggs in the United States, we counteracted the stickiness of the sturgeon eggs, which thereafter lose that quality and become easy to handle in any fish-hatching apparatus. We obtained quite good results in using two very different kinds of apparatus, namely, the Williamson trough and the Chase jar; but in both cases we preferred to employ not running water, which is always a little muddy, but filtered water without circulation and with constant aeration.

After three or four days of development the eggs hatched, and thousands of fry were obtained. For the first four or five days the young do not require any external food, having a sufficient quantity of nourishment in their yolk sac; but after that period we introduced into the troughs and jars living food consisting of the smallest fresh-water crustaceans (*Daphnia*, *Bosmina*, etc.) collected in small, warm wa-

ters with fine-meshed nets. The fry soon begin to search for these crustaceans. When they become larger and accustomed to take food, we begin to feed with chopped earthworms, of which young sturgeon are very fond. Fed in this way sturgeon grow very

rapidly, attaining during the first month a length of about 1½ inches and during five months 10 to 11 inches. Fry of two to three months have already begun to closely resemble the adults and are very pretty fish.



Millions of People Who Never Eat Fish

Newfoundlander suggests Central Europe as a Huge Market for Salt Dried Codfish



The Newfoundland Trade Review had an interview recently with Mr. A. H. Murray, who returned by the S. S. "Sachem" to St. John's, from an extended trip to Greece and Italy. As to the prices for our fish next fall, Mr. Murray thinks that it largely depends on the question of exchange, particularly in Greece and Italy. The French will be our most formidable competitor next fall in the Mediterranean ports. They are even today offering big stocks of last year's fish in the Mediterranean markets at so low a price that we cannot compete with them. We can only sell when they have sold theirs. The French franc is so low in exchange that it gives the French fish exporters an advantage that we have no chance of attaining.

Mr. Murray says that Spain is well stocked with fish and there will be no normal demand there for a long time. Portugal is blocked with fish and their exchange is so low that the exporters who have fish there unsold are going to suffer heavy financial losses when we consider the high prices paid for this fish in Newfoundland. Besides there is a large quantity of our Labrador fish in Greece unsold, quite a lot of which will have to be destroyed. The keenest competition in all our European markets will prevail next fall, chiefly owing to the abnormal activity of the French fishermen.

Good Labrador Cure

Reverting to the question of bad Labrador fish lying in Greece, Mr. Murray said it would be a mistake to take this as an argument to the effect that our Labrador fish generally was badly cured last season. On the contrary the truth is—that we have never had better cured Labrador fish than we had last season. The circumstances that generally result in bad cargoes or part cargoes are such as would cause deteriorated and spoiled fish even though it were cured as perfectly as fish could be cured in the first instance.

After the very best fish is shipped certain things can happen if the interval of happening is long enough that in Southern Europe will make it when ready to be discharged the very worst of fish. When the Newspapers of Newfoundland are publishing comments on "Bad Cure of Fish" they seem to lose sight of this fact and to make no allowance for it.

Criticism not Justified

The assumption gets into the minds of the people at home and abroad, that because some Labrador fish when it reaches the Greek or Italian market is spoiled, therefore, all Labrador fish is badly cured. Too much stress is made by the papers, Mr. Murray thinks on the topic of badly cured fish. They would be more justified in proclaiming that all our fish is well cured than in leaving it to be inferred by their stric-

tures and criticism that all of it is carelessly cured. In fact, the whole trade knows that the former is nearest to the truth.

Such reports about cured fish reaching the foreign buyers are made the most of by them to their advantage and to our disadvantage. It gives them something to "go on" out of our own mouths when there is no justification for the same. Our talk and our newspaper writing should be summed up in a few words, "Our fish is well cured and we therefore want the highest price for it."

If there are a few planters and fishermen who are found to send in bad fish, the best plan would be to get after them with advice, admonition and instruction by local authorities, and make them speedily reform or, to put it in the form of an old adage, we should "wash our dirty linen at home" and not admit to the foreign markets that we are sending out a quintal of bad Labrador fish. The Labrador fish was splendidly cured last year and will be better I believe this year. If there is any excuse for more rigid cure—supervision, it should be given with much more justification to the shore fish.

Mr. Murray was very strong on the idea of securing new markets for our fish amongst the millions of people who have never used it, because they have never seen it. If given a dry salt codfish today these people would not know what it was and would not know how to cook it. The countries into which an effort should be made to introduce our fish are Austria (inland), Hungary, Bulgaria, Albania, Jugo Slavia, Czechoslovakia, Ukraine, Turkey, and Southern Russia.

Only a Breakfast

Our entire catch would only make a breakfast for these people if we could open the same access to them as we have to Portugal or Spain, and from what I saw and learned in Austria—I believe this is possible with a well organized effort by the Government and Board of Trade combined. An individual firm cannot do it. The idea would be to send one or two men into every large town of these countries with samples of our dried codfish and let them have it cooked on the spot and given to the people to eat.

"The time is very opportune to introduce salt codfish amongst these inland peoples. Nearly all their cattle were killed in the war years and it will take five or six years to replace them in the way of natural growth. Meantime they are looking around for all kinds of food substitutes for beef and mutton. What better substitutes can they have than salt codfish and I am sure they would gladly adopt it in their bill-of-fare if the opportunity of getting it was placed within their reach. We need not fear a big voyage any more if we can get these markets."



Reorganized Fisheries Administration Needed

By COLIN McKAY.



Some rather drastic criticism of Canadian fisheries policy was made not long since in the House of Commons by Mr. Wm. Duff, M.P. for Lunenburg, but he appears to have been, in the main, expressing views which prevailed within the Department of Fisheries itself, if we may judge from some admissions which have been made by Ward Fisher, who was recently appointed Chief Inspector of the new organized Eastern Fisheries Division. Asked what was the purpose of the re-organization of the administrative service in the Maritime Provinces, Mr. Fisher said "the Department has been handicapped for years under a system of administration which made impossible any coherent or successful effort to encourage and develop the fisheries." Mr. Fisher added that the fisheries were too extensive to have the administration successfully centralized at Ottawa, and that the system of employment of officers and guardians did not admit of the retention of men like to give efficient service. Mr. Duff, in his indictment of the administration, made similar points. Mr. Duff's demand that immediate steps be taken to formulate and put into effect a vigorous policy for the development of the fisheries of Eastern Canada, has therefore considerable warrant in the admissions of the chief fisheries officer for Eastern Canada.

Apparently the Department had determined on a reorganization of the administration service before Mr. Duff assailed it, but the division of the fisheries into districts presided over by the officials with considerable powers, will not of itself turn the point of recent criticism. It may be presumed that the reorganization is preliminary to a general overhauling of the whole fisheries policy, but as yet the public has been vouchsafed no information as to the character of such overhauling, or as to any new departures contemplated or in being. From statements made by Mr. Fisher it would appear that the question of formulating a new fisheries policy is still somewhat at sea. Mr. Fisher states that in his opinion "one of the first and most important duties is a thorough survey of the fisheries, in order to gain an intelligent knowledge of the possibilities, needs and requirements of the industry." If after all these years the Department has not sufficient data to form an intelligent estimate of the possibilities and requirements of the industry, there would appear to be a very good need for reorganization and a general overhauling of the whole system of administration. In 1912 the cost of the administrative service of the Canadian fisheries was nearly nine times as great as the cost of the administrative service of the fisheries of France, though the value of the fish catch in that year was practically the same as that of France. Allowance must be made for the great extent of our fisheries, but even so, we pay for an administrative service that might be expected to give a good account of itself. In 1913 Canada expended on fisheries administration practically as much as the big republic of the United States did.

M. H. Nickerson, before the war, claimed that the

quantity of fish caught by Nova Scotia had not increased since the days of the Washington Treaty, and that the increased value was mainly due to the increase prices of lobsters. Mr. Duff told parliament that the increased values of the catch of Eastern Canada during the war was due to high prices, "and not due to development." On this point, Chief Inspector Fisher says: "It is quite true there has been little increase in the catch for some fifty years, notwithstanding that the markets can easily absorb a very greatly increased catch. Indeed, the catch, particularly for the fresh fish trade, would have shown a decrease in the past several years if it had not been for the operations of some five or six modern trawlers, and this in the face of the fact that there has been a very great improvement in off-shore fishing, due to the replacing of the row and sail boat by the adoption of the modern motor-boat. It should be pointed out that our fishing population, even at the more advantageously located points, is not adequate to supply the demands for experienced fishermen."

At the same time Mr. Fisher argues that steam trawlers are not likely to be employed in the Canadian fisheries in any considerable numbers—at any rate for some time to come. One difficulty he sees is the lack of trained men to handle them, but that can hardly be said to be insurmountable. Given the trawlers, men can soon be trained, but probably only large companies could afford to undertake this. More pertinent—yet not altogether consistent with his previous view—is his statement that "the industry is not in a position at present to handle the product of any considerable fleet of steam trawlers. Our home market cannot be greatly expanded until facilities for curing, packing and transporting are provided. Also it should be remembered that we have few large centres of population and these are located at widely separated points."

Mr. Fisher advocates the provision of more cold storage stations, and the construction of safe harbors and anchorages, especially in Cape Breton, where there is but indifferent exploitation of the prolific fisheries. Mr. Fisher regards the agitation for a College of Fisheries as an encouraging sign, and has for some time been working on a plan to make technical education available to fishermen. "There is little doubt," he says, "that the industry will not take its proper place in the fish trade of the world until those engaged in the fishery are familiar with the best methods of catching, curing, packing and manufacturing the product so as to take advantage of the demands of the domestic and export trade."

Against the admission that the maritime fishing industry has been practically stationary, so far as the quantity of fish caught is concerned, may be set the fact that between 1910 and 1917 the value of the fisheries of British Columbia, Ontario and the Western Provinces increased more than four times. There should be in that a challenge to the enterprise of the Maritime Provinces.

FISH HATCHERIES ON THE LAKES

The season's distribution of fry from hatcheries operated by the Fisheries Branch, Department of Marine and Fisheries, in the Great Lakes and Lake of the Woods, amounted to 388,000,000, of which 205,500,000 were whitefish. The Kenora hatchery led the way, setting free 19,500,000 whitefish, making a total of 93,400,000. The Kingsville hatchery came second with a total distribution of 82,000,000, and the Thurlow hatchery third, with a total of 79,785,700. The distribution from Sarnia was 55,840,000 and from Collingwood 47,660,000. The hatcheries at Port Arthur, Southampton and Wiarton made up the balance of approximately 29,000,000. The species included, in order, were whitefish, pickerel, herring, salmon trout and spring salmon.

WORK OF FORT FRANCES FISH HATCHERY

One cannot realize the multitudes of fish that are being carefully and scientifically hatched and deposited in Rainy Lake by the Fort Frances fish hatchery. On Saturday some 10,000,000 pickerel and white fish were distributed in the lake in favorable localities. These small fish—about the size of wrigglers—after being carefully nursed along in the hatching by Supt. Coulter, who is an expert of many years experience, are placed on board the "Gladys R." in fifteen gallon cans and conveyed to the places of deposit where they are poured into the lake by Supt. Coulter alone. In this case and at lunch are the two occasions on which the Superintendent is abundantly able to help himself and scorns all assistance.

The small fish, placed in the lake on Saturday were only one of several such loads that have been deposited already, and that are yet to be placed this season. They consist of pickerel at this season. Many of these fish will be about five inches in length at the end of this season and will be large marketable fish in three or four years. They are said to remain in the vicinity of the localities where they are first deposited or if they leave they return like the birds.

The question may be asked: "Why remove the spawn from the lake at all?" The answer is simple. Suckers would come along and devour the spawn: that is their habit. When the fish are put into the lake after being artificially hatched they are not attacked at all by the suckers. In this way a mortal enemy is avoided and millions of fish preserved. Other enemies do not attack the little fellows—they are too small to make a meal until they are able to take care of themselves to some extent. We can therefore understand what an inestimable benefit the hatchery will be to the fishing industry.

SMALL QUANTITIES OF JAPANESE FISH IMPORTED INTO THE ARGENTINE

Mr. B. S. Webb, Canadian Government Trade Commissioner in Buenos Aires, Argentine Republic, reports under date June 11 that only small quantities of Japanese fish products are imported into Argentina. During a period of five months only 75 cases of codfish were imported into Argentina from Japan. The quantity of salmon was larger, 750 cases being imported, but it is believed that, although coming from Yokohama, it was actually a consignment of British Columbia salmon.

Small quantities of dried stock-fish have also been received from Japan.

WHITEFISH IN BRITISH COLUMBIA

Last season the Fisheries Branch, Department of Marine and Fisheries began experiments with a view to establishing the eastern whitefish of the Great Lakes in the larger and more important lakes of British Columbia. The first shipment of eggs was made in 1919, and consisted of 7,000,000 in the eyed state. These were sent from the Sarnia hatchery, Ontario, to the Harrison Lake hatchery British Columbia, and the resulting fry were distributed in Harrison Lake.

This spring the experiment was extended and a shipment of 12,000,000 has recently been made from the Sarnia hatchery of which 7,000,000 will be laid down in the Harrison lake hatchery. The balance will be hatched in the Pemberton hatchery, and the fry distributed in Lillooet Lake.

These experiments will be continued for a term of years, and will be extended as conditions permit to all of the larger and most suitable lakes of British Columbia.

NEW PORT STANLEY COMPANY.

Canadian Fisheries and Storage Company, Limited, has been granted incorporation under the Ontario Companies Act, the incorporators being H. A. Short, Agnes May Short, and Murdock McIvor, of Port Stanley, C. E. Butler of St. Thomas and R. E. Menzie of Oakville. The Company, which is empowered to carry on a general fish business, is capitalized at \$150,000 and its head office is at Port Stanley.

PERCENTAGE HATCHED HIGHER

A most successful season in the Atlantic salmon and trout hatcheries in Nova Scotia has just been concluded. While the total number of eggs was not as large as it has been for the last few years, the percentage hatched was considerably larger and the fry were all distributed in a healthy and vigorous condition. With the exception of 262,000, the balance of the 6,722,000 fry distributed were Atlantic Salmon. Fifty thousand fry were placed in rearing tanks and troughs. The greatest distribution was from the Windsor hatchery, which released 2,011,000. Middleton hatchery released 1,755,000 Atlantic salmon and approximately 200,000 rainbow and speckled trout. Margaree hatchery, set free 1,250,000 Atlantic salmon and 65,000 speckled trout. From Bedford 1,164,000 Atlantic salmon fry were released and at Lindloff 278,000 of the same species.

In the Fisheries District of which H. K. Stoddard, Lower Shag Harbour, N.S., is Overseer, two new fish curing establishments have been opened this season, one operated at Shag Harbour in the name of "L. A. Greenwood Fishing Company," and the other operating at Clark's Harbour under the name of "Nicker-son Brothers."

The Frank E. Davis Company, of Clark's Harbour, is making an addition to its plant by installing cold storage and freezer. This concern is planning to can all kinds of fish and is giving employment to a large number of males and females. This is a branch of the Freeport, N.S., outfit and all sales are made through the latter point.

Government Inspection and Observation

DR. C. McLEAN FRASER

In advancing arguments in favour of Government inspection for all fish products sufficient attention has not been paid to the effect that such inspection would have on the conservation of fish.

In the preserving of fish by canning or otherwise, the poor product from a species ordinarily of good value, is mainly due, apart from any lack of care in the process, to one of three causes: the taking of fish that are very immature, the taking of fish that have deteriorated on account of the near approach of the spawning season and the use of fish that have been too long out of the water. If a grade of fish, poor through any of these causes, were eliminated by inspection, conservation would stand to gain much. These three factors have all been pronounced in the case of the different species of salmon.

The taking of immature salmon is confined almost entirely to the spring and the coho, as the other three species remain in deep water until the direct migration to the rivers and streams is started, after which they take no food. During the last few years, in the strait of Georgia, at entrance to the strait of Fuca and at the mouth of the Columbia River, great numbers of immature fish have been taken, many of them so small and soft that they are unsuitable for preserving by any method. Dr. E. V. Smith of the University of Washington, has made extended observations in two of these areas and he is able to show that the loss to the industry in quantity alone by catching these immature fish is enormous. If Government inspection were in force these fish could not pass muster as of good grade, and if there were no ready sale for them, the fishing could not long continue. If such a result could be brought about, this alone would be sufficient to make Government inspection worth while.

It is of even greater importance to prevent the taking of fish deteriorated on account of the rapid growth of the roe, near spawning time, since here the whole five species are affected. In some species, notably the coho and the humpback and to a large extent the chum salmon, the maturing of the roe takes place very rapidly, with a corresponding rapid change in the general appearance of the fish. In the spring and sockeye, that go so far up the large rivers, the change is not so rapid. Normally any salmon is at its best immediately before this change takes place. The fish that go a long way up the rivers are still in good condition when they enter the rivers, but the fall salmon that go up the small streams or short distances up the larger streams are seldom so. Of these the humpbacks have the softest flesh, and hence they deteriorate the most rapidly. Often they are in poor condition before they reach the mouth of the river. In many cases these fall salmon form large schools at the mouths of rivers or more particularly at the mouths of small streams and it is here they are caught with the purse seines. The water in the streams is often so low before the fall rains come that the fish do not get up readily for some time after they have begun to deteriorate, and have become more value as parent fish than as the raw material for a poor grade

product. Proper inspection would eliminate the wholesale taking of these deteriorated fish and would thus go a long way in conservation.

Just here an international question may arise, as it has arisen in the past. In some cases where Canadian fishermen have been prevented from catching deteriorated fish, American fishermen have come in to take them over to American canneries, where they were put up as fish caught in Canadian waters and canned in American canneries. This gross injustice to the Canadian fisheries is two-fold. In the first place the American fishermen are allowed to take fish from Canadian waters that the Canadian fishermen are prohibited from taking and, in the second place the reputation of the Canadian fish suffers through no fault of the Canadian industry. Apart altogether from the question of a general embargo, this procedure should be stopped at once.

The preserving by canning or otherwise of fish too long out of the water, indirectly has much to do with the fish supply. The firm flesh of the chum salmon will carry longer than the softer flesh of the humpback and there is variation in the other species as well. An extreme limit of 48 hours between catching and canning is now generally accepted as being advisable. Proper inspection, by eliminating the canning of fish held for a longer period, would prevent purse seiners in particular from going around farther and farther afield to practically clean up stream after stream when fishing in nearby areas is no longer profitable. In many cases such intensive fishing has made whole areas almost barren.

Here again American fishermen have been serious offenders and to the operations of these is due to a large extent the agitation for an embargo on all Pacific salmon.

Government inspection, much more extensive than it is, should have a decided bearing on herring conservation. Although a herring inspector was appointed a couple of years ago for the province of British Columbia the machinery for inspection should be extended to make it more readily applicable. In any case there has been as yet little chance to gain much benefit from the inspection since the inspector was appointed as the market for Pacific herring has been too nearly ruined to recover for some time. When on account of war conditions a wide open market for Pacific herring properly prepared, appeared, there was a chance to establish the industry on a firm basis, such a chance as had never come before, and will not likely soon come again, but as there was no Government inspection there was a glut of inferiorly prepared fish and the market went a-glimmering even for those who put up the superior product. One of the contributory causes was the use of fish that had become soft and poor in oil, on account of the near approach to spawning. A fish is not necessarily more useful to the race near spawning time than at any other time of the year, but at this time the herring, like other fish, become less active and in consequence seine hauls may be made in the same school again and again until the school is practically wiped out. The fishing regula-

tions call for a closing down of fishing when the fish begin to spawn, but for some time before this the fish are not in good condition for preserving, but control here cannot well be worked by fishery regulations. On the other hand it should be an easy matter to control by fish inspection and the species would receive the benefit.

Other fish used extensively, such as the halibut, sable fish and pilchard do not spawn in fresh water or in shallow water in the sea, hence with them inspection would have little effect on conservation, but whether other fish come into the list or not, the effect on the salmon and the herring is well worth while considering.

FRANCE TO SPEND \$40,000,000 ON FISHERIES.

By COLIN McKAY

France will proceed with the project to spend 200,000,000 francs, or \$40,000,000 at normal exchange, on the development of her fisheries. The bill which passed the Chamber of Deputies last October has been adopted by the Senate. Evidently the great consideration with the Senate was the need of doing something to reduce the high cost of living which had attained such a pitch some months ago that there was fear of revolution. The French railway strike brought matters to a crisis; the Government broke the strike, but not before it had started a big drive against the high cost of living, which produced very considerable results. In this effort it was supported by the bankers, alarmed by the angry attitude of the workers. This, no doubt, explains why the fisheries development bill went through the Senate without any apparent opposition, and why every reference made by Senator Doumerque, chairman of the Marine Commission, to the possible effect of the bill upon the problem of public alimentation was received with applause. Only one amendment to the bill as it came from the Chamber of Deputies was proposed in the Senate. M. Flaissieres, socialist senator from Marseille, moved that in the disposal of fishing vessels built or acquired by the state, preference be given to associations already engaged in the fisheries, whether of employers or working fishermen. This was rejected on two grounds; first, that there should be no discrimination against any public association willing to help in augmenting the food supply, and second, that the amendment was largely superfluous as the provision to sell to professional syndicates covered both patrons and fishermen, associations and unions.

The presumption of the act is that those engaged in the fisheries, vessel owners, co-operative societies and fishermen's unions, will be the first to take advantage of the opportunity of acquiring the fishing craft, of which the state is able to dispose, but it is provided that public bodies, or corporations operating public utilities, may take over fishing vessels from the government on the same terms as companies at present operating fishing vessels, or fishermen's unions.

The grant of 200 million francs is to be expended as follows:

50 millions on fishing vessels and craft equipped with refrigerators to carry fish—say from St. Pierre or Iceland to France.

35 millions to construct cold storage plants, refrigerator cars and facilities for curing and storing fish in the fishing ports of France.

115 millions for the improvement of the fishing

ports, building breakwaters, piers warehouses, providing facilities for coaling or taking oil, making connections with railways, constructing dry docks etc.

The fact that over half of the 200 millions is earmarked for the improvement of fishing ports is interesting. How many properly equipped fishing ports have we in Canada? According to Horace J. Logan, president of the Maritime Board of Trade, and an ex-M.P., this country has contributed in one form or another, a matter of \$1,250,000,000 to railway development, but it is notorious that when a maritime member of Parliament has asked for a vote of a few thousands to build a breakwater in the interest of our fishermen, Ottawa correspondents of inland newspapers have usually made a joke of it. Often it has been crudely insinuated that maritime members demanded votes for breakwaters simply for political purposes, because it would increase their prestige if a little government money was spent on the fishing ports of their constituencies. Probably the maritime members deserve this; if they had studied the history of European fishing ports they would not have been content to ask for breakwaters. Ymuiden in Holland, Gestmunde in Germany were created out of public monies; other important European fishing ports owe their importance to public grants. On the basis of the value of the fish catch, how much money would the Canadian Government have to vote to the fishing industry in order to be on a par with France? Not less than \$40,000,000, for just before the war the fish catch of Canada showed a value slightly in excess of the catch of France. And of this amount \$23,000,000 would be allotted for the improvement of fishing ports. Even on the basis of population the Canadian Government would have to vote \$8,500,000 to do as much for the fishing industry as the Government of France has undertaken to do.

It is proper to note that before the war the French Government was only spending a little over \$100,000 per annum on its various fisheries services, while the Canadian Government was spending about \$1,000,000 on its fisheries services. But the French Government was also distributing sums ranging from \$600,000 to \$1,000,000 per year in the form of bounties to vessel owners and fishermen engaged in the prosecution of the deep sea fisheries. And, moreover, the French Government has for years spent large sums under the head of public works on fishing ports and the provision of refrigerator car services for the use of the fishing industry.

SEASON'S FRY DISTRIBUTED.

The hatcheries in Manitoba operated by the Fisheries Branch Department of Marine and Fisheries, have completed distribution of fry for the season, the total liberated numbering 226,446,850. Of these 25,353,600 were pickerel, and the balance whitefish.

With some few exceptions the distribution of fry has also been completed in British Columbia. In that province 114,479,487 fry have been liberated made up chiefly of the various species of salmon. There were also, approximately, 7,000,000 whitefish, and about 740,000, Kennerley's smelt.

The trap operated by Coolens at Fox Point, Lunenburg County, Nova Scotia, caught 10,000 pounds of pollock on June 28th.

Annual Meeting of the Pacific Fisheries Society

The Annual Meeting of the Pacific Division of the American Association was held in Seattle, June 17-19. On this occasion the Pacific Fisheries Society joined in with the other societies. For the morning sessions the various societies met separately and for the afternoon sessions they met conjointly.

The Pacific Fisheries Society held morning sessions on Thursday and Friday, with the President, Dr. C. McLean Fraser, Director of the Biological Station, Nanaimo, B.C., in the chair. An extensive programme was provided but time did not permit of its being fully carried out. In the papers presented most of the attention was centred on the Pacific Salmon. They were as follows:—

Immature Salmon. Dr. E. V. Smith, University of Washington, Seattle,

Much data were collected directly from the fishermen and the canners to arrive at some idea as to the extent of the financial loss sustained by catching immature chinook and silver salmon at the mouth of the Columbia River and at the entrance to the Strait of Fuca. This gives evidence of a very large annual loss, not only to those connected with the industry but to the country as a whole.

The progeny of a pair of salmon. A. Robertson, Officer-in-Charge, Harrison Lake hatchery, B.C.

In the spring of this year it was possible to, examine the nests of several chum salmon on the shore of Harrison Lake and to make an actual count of the number of eggs hatching out in each. These had a range of from 300 to 1500. This would indicate that the mortality in the hatching of natural spawned fish is not so great as is commonly stated.

The tape worm infection of Washington trout. Dr. Nathan Fasten, University of Washington, Seattle.

In some of the lakes in the state of Washington the trout were rapidly dying off. An examination of some of them showed that they were infected with a tape-worm. As yet, it has not been possible to find the other host, but the indication is that it is one of two or three water birds that visit these lakes.

The maturity of the Chinook salmon caught in the Ocean along the Pacific Coast. W. H. Rich, Bureau of Fisheries.

A study of the scales has been used extensively as an indication of age in salmon as in other fish. In this instance an attempt was made to co-ordinate the size of the eggs in the female with the age at the time the fish was caught, with quite satisfactory results.

Some effects of reduced diet on the development of salmon fry. Professor G. F. Sykes, Oregon Agricultural College, Corvallis.

Various experiments were carried out to find out the effect of reduced diet in order to be able to detect the cause when similar effects are produced in fry at large. A relatively large head, with attenuated body is the most marked symptom.

The Development of a Fisheries School. Dr. E. W. Ritter, Scripps Institution, La Jolla, Cal.

In connection with the work of a fisheries school there should be a very definite correlation between such work as is being done at the various Biological Stations and the practical application of this in the school. Not only this, but there should be a greater effort made to get the support and interest of the general public by showing the value of the work. No better method is available than by making use of the daily press and of periodicals to present the facts in a readable style.

C.F.A. Resolution Endorsed

As a matter of business the formation of an International Fisheries Council was discussed and a resolution endorsing the action of the Canadian Fisheries Association in urging the formation of such a Council was most favorably received. Professor John N. Cobb, Director of the College of Fisheries, Seattle, was elected president for the ensuing year.

A pleasant feature of the second morning session was the inspection of the buildings and equipment of the College of Fisheries. Director Cobb fully explained the nature and the value of the various pieces of equipment and their use and application in the courses given at the College as well as the plans for prospective expansion.

On Thursday afternoon a symposium on "The animal and plant resources of the North Pacific Ocean," under the auspices of the Pacific Fisheries Society, the Western Naturalists and the Ecological Society of America, brought out a good attendance.

The President of the Pacific Fisheries Society, who presided, called attention to the progress that had been made towards co-operation in International marine biological research. From the Fisheries side, the resolutions passed by the Canadian Fisheries Association at the last two meetings, together with the promised support of the Fisheries Departments in the three countries, indicated the desire for co-operation between, Newfoundland, Canada and the United States, and the symposium at the Pasadena meeting a year ago indicated the tendency for more general biological co-operation in the Pacific. He then read a paper "Marine Biology in relation to the North Pacific Fisheries."

Natural conditions along the Pacific Coast of North America are particularly suitable for a variety and an abundance of marine life. Each species is a study in itself but fortunately the investigation carried on in connection with any one species often helps with the investigation of many others and the work on several phases of the one problem may be carried on simultaneously by specialists in different lines of work. To make satisfactory progress co-operation is needed among those working in all fields of the science or related sciences, the taxonomist, the ecologist, the embryologist, the morphologist, the geneticist, the biometrician, the experimental biologist, the physiologist, the biochemist, the hydrographer, the pathologist,

the parasitologist, and the dietician. Any of these working alone must make slow progress, but if all were working in co-operation with material collected for work internationally planned on a large scale, much might be accomplished with no greater effort than is expended at present. There seems to be no particular reason why the public should not become sufficiently posted to support work of this kind for the fisheries as well as for the sister industry, agriculture.

Can the Alaska Fisheries be Saved? Dr. Barton W. Evermann, California Academy, of Sciences, San Francisco.

A review of the efforts towards conservation by regulation of fishing, artificial propagation, etc., in Alaska, since the territory was taken over by the United States, shows little of certainty that the efforts have been of much avail. This is accounted for by the fact that in many instances a satisfactory examination of conditions has not preceded experiments made, nor were the results sufficiently investigated and correlated. The Government has not given sufficient financial support to provide for such work and unless it is provided for in the near future it will be too late to save the situation.

Present Conditions and Needs of the Alaska Salmon Fisheries. Ward T. Bower, U.S. Bureau of Fisheries.

This paper was somewhat more optimistic than the preceding. It was admitted that conservation results had not been all that could be desired, but the Bureau of Fisheries had done as much as was possible with the amount of Government support received. The method of regulation under the code for Alaska now in prospect will give a much better chance for good results and improved methods of fish culture with better facilities for checking results will make an improvement with this branch as well.

Ocean Pasturage and Ocean Fisheries. W. E. Allen, Scripps Institution, La Jolla, Cal.

Although most of the larger marine species are carnivorous, their diet as well as that of the smaller species, must ultimately depend on plant life of the sea, which is present largely as diatoms and these commonly make up the bulk of the microplankton. A study of the nature, number and migration of the diatoms is consequently fundamental in any detailed marine biological investigation.

Other papers prepared but not presented were:

Relation of Scientific Investigation to the Fisheries. W. F. Thompson, California Fish and Game Commission, Long Beach, Cal.

Future of the Pacific Fisheries. Professor John N. Cobb, College of Fisheries, Seattle.

The Conservation of the Salmon in the Western United States. W. H. Rich, U.S. Bureau of Fisheries.

The Necessity of Conservation in Whaling. R. C. Murphy, Brooklyn Museum, Brooklyn, N.Y.

These will be included in the printed copies of the symposium papers.

On Friday afternoon a general meeting was addressed by Dean R. W. Brock, University of British Columbia, Vancouver, his subject being "The last Crusade of Allenby."

On Friday at noon, the Seattle Chamber of Commerce made its weekly luncheon a Fisheries luncheon and invited the members of the Pacific Fisheries Society

to be present. Short addresses were delivered by Dr. Evermann and Dr. Fraser.

Dr. Evermann referred to the work that should be done on such fisheries questions as that pertaining to the Pacific salmon and emphasized the need of Government support in such work. While ninety three per cent of the Government expenditure in the United States goes to pay for past wars and for military and naval upkeep, only one per cent is devoted to the encouragement of scientific research. Until a more benevolent attitude towards such work is developed great unnecessary loss and waste must continue.

Dr. Fraser referred to the need of co-operation in research on the various fishery problems of the Atlantic and the Pacific and referred to the progress that is being made towards the formation of an International Fisheries Council to include representatives from Newfoundland, Canada and the United States. Such bodies as the Seattle Chamber of Commerce can do much towards arousing the public to the necessity for support in such an important matter.

The matter of entertainment was well looked after. On Thursday evening the University gave a public reception at which Dean Condon, in the absence of President Suzzallo gave an address of welcome, which was responded to by Dr. B. W. Evermann, Chairman of the executive of the Association. Dr. J. C. Merriman, the retiring President of the Association delivered an address on "The Research Spirit in every day affairs of the average man." On Friday evening, through the courtesy of President Suzzallo and the Committee on Arrangements, a complimentary dinner was given to the members and visiting delegates. Motor cars were available at all spare times for tours about the city, the tour about Seattle boulevards being a particularly pleasant one.

On Saturday the time was given up to excursions. The trip to the Oyster-beds in Hoods canal proved to be the greatest attraction to the Fisheries Society.

The meeting throughout was most enjoyable and profitable. Much credit should be given to the President and the Faculty of the University of Washington, on whom devolved the greater portion of the preparation for the meeting.

ICEHOUSE FELL INTO LAKE.

The Alberta Fisheries Company located at Widewater on the south shore of Lesser Slave Lake, recently suffered a very severe loss when the ice house containing 600 tons of ice became undermined by the high water and fell into the Lake. Practically all the ice was destroyed together with merchandise, to the value of \$1,000.

F. Ballach of Wadner also experienced a similar loss. It is possible neither of these Firms will be in a position to operate, as the cost of landing ice in carloads from Edmonton is approximately \$5. per ton. Other Companies are well prepared and opened their season, July 15th.

SUCCESSFUL WHALING IN BRITISH COLUMBIA

Although it is early in the season, the reports from the West Coast of British Columbia are that the whaling season has been very fair so far.



Lake Erie Fishermen Hold Regatta

FISHERMEN'S CARNIVAL HELD AT PORT STANLEY



Plans made in the interval between the annual convention of the Lake Erie Fishermen's Association and July 1st found their culmination on Dominion Day, when, at Port Stanley, Ont. the Association staged its first regatta. The event, which found its inception at the gathering in St. Thomas last February, was co-operated in by the Port Stanley authorities and by the officials of the London and Port Stanley Electric Railway with the result that upwards of fifteen thousand people were attracted to the charming Lake Erie port on Dominion Day.

Both the national holiday and the day following were taken over by the association in the carrying out of its elaborate program of aquatic and land events and in the course of the two days celebration the Lake Erie Fishermen's Association proved its sportsman-like qualities and incidentally put itself and the port very much on the map of Western Ontario. Thousands of people came from various points in the western part of the Province, and lake ports on the other side of the boundary sent their quotas, notably Cleveland, which sent a ball team and a lot of rooters to swell the crowd. The educational feature of the celebration, also, was not inconsiderable.

Much of the program was designed to show how the men engaged in the lake fisheries ply their trade and this was done in a series of contests in seining, net laying, net mending and sailing that proved mighty exciting to the fishermen themselves and vastly interesting to the thousands of laymen gathered on the beach on the beach or on launches, tugs and various other craft on the water. Then there were many contests by the fishermen on the land which demonstrated clearly that the prowess of those engaged in the fish business is not confined to their work out in the lake. Several bands had been engaged for the event and the whole regatta was carried out on a scale that reflected the utmost credit on President A. S. Brown, Secretary E. A. Short, Vice-President A. E. Crewe and the other members of the executive and the various other committees having the arrangements in hand. Port Stanley's chief executive extended a hearty welcome to the visitors but owing to the delay in starting the program on Thursday there was no speech-making. Hon. F. G. Biggs, minister of Public Works for Ontario, attended the gathering on the second day and was an interested spectator of the day's events.

Review of the Fleet

It was 11 o'clock on a bright sunny Dominion Day when Capt. Robinson of the Government tug Becancour pulled his whistle cord and steered out into the centre of the harbor to lead the grand review of the fishing fleet and other gayly decorated craft that had been tied up at their berths in Kettle Creek. On board were members of the executive committee, some guests and the Veteran's Band from London. There were about twenty tugs in line and the course lay a couple of miles up the coast and close enough inshore to give the thousands of spectators on the bank an excellent opportunity to view the spectacle. "I reckon

on the Spanish Armada has nothing on us," quoth Capt. Robinson as he swung his tug around to port to give the judges a closer scrutiny of the flag-bedecked craft. "Nor the Grand Fleet either" rejoined President Brown who proceeded to yell instructions through the megaphone to the skippers to close up the gaps. It was Mr. Brown, Mayor Brinckman of St. Thomas and Chas. F. Hamlyn of the **Canadian Fisherman** who did the judging and out of the long line of splendidly decorated tugs selected the "Wilma" of Port Stanley owned by Messrs Tongue and McDonald as the winner, with Morgan Bros' tugs the "Morgan" and "Donald Mack" second and third respectively. Other finely decorated tugs in line were Onajag, Valkarye, Iona, Lavaltrie, Miseford, Archie Mac, Henry F. Jelly, Edward S. Max L., Choctaw, John R. Moore, Cisco, Brown Brothers, Frank Stanley, Oriana.

Some Speed Contests.

Following the review of the fleet a program of speed contests on the lake was pulled off. The pound net boat race for the silver trophy donated by the Times Journal of St. Thomas was captured by "Blue Jean" of Port Bruce, owned by McGuire and Drumgold, while the second and third prizes went to P. J. Paddin of Port Stanley and Hales and Black of Port Stanley respectively. The race covered a two-mile course and proved an exciting one to the thousands of spectators on the beach. The "Blue Jean" won by about ten boat lengths.

Two tugs gave a fine demonstration of setting and lifting nets, the "Morgan" of Port Stanley winning the contest from the "Onajag" owned by Wilson & Co. of Port Stanley. The "Morgan" paid out, set and gathered in 3,700 feet of net in 17.47 minutes. The "Onajag" unfortunately missed her buoy at the turn and lost considerable time by the occurrence. Both crews, however, put up a splendid fight for the honors and the competition proved a very keen and exciting one. Following these events there were swimming races for both ladies and gentlemen, diving from a greased pole, canoe races, etc., all of which created great interest and amusement, while at night there was a band concert, a show carnival on the board walk and aeroplane stunts over the water by a couple of intrepid fliers, while a brilliant display of fireworks donated by the L. and P. S. Railway further entertained the vast crowd. The Battle of Jutland was the big feature of the fireworks display, the feature being staged by the tugs of the Lake Erie fishing fleet, who performed their part well.

Perhaps the outstanding event of the regatta was the big nine-mile tug race held on the morning of the second day which attracted a large number of entries. In a somewhat choppy sea, the Wilma, owned by McDonald, Tongue and Sanders, of Port Stanley galloped around the buoy a fairly easy winner and thus annexing the handsome silver trophy put up by the London Free Press, which was presented to the winning crew by President Brown, this event being staged before a moving picture camera. Miss Wilma McDonald.

after whom the winning craft was named, received the trophy on behalf of the crew and she was also presented with a silk Union Jack by Mr. Brown. The race was a spectacular one from start to finish and those on board the official tug, who did not fall victims to sea sickness, witnessed a pretty sight. The Wilma took the lead after a mile or two had been covered and never was in serious danger of being overhauled. She was followed at times rather closely by the Morgan but galloped home an easy winner. The

tugs came in in the following order:—

Wilma, Messrs. McDonald, Tonge & Sanders; The Morgan, Morgan Brothers; Onajag, W. McPherson; Edward S., Messrs. Smale and Nicholas; Mable D., Messrs. Nicholas and McCauley; Cisco, H. Taylor; Iona, H. A. Short; Choctaw.

A heavy thunder storm in the afternoon brought the festivities to a rather sudden termination but it was announced that these events that had to be cancelled will be staged at a later date.

Market Your Fish Direct

Canadian Fish Exporters Not Developing Foreign Trade in Proper Manner

By JOHN W. GREEN.

Canadian fish producers are undoubtedly deserving of the criticism which a banking institution recently levelled at Canadian business in general when it came out with the statement that the necessary amount of energy was not being exerted to develop foreign trade. Exporters of fish have been for many years accustomed to selling their stock to brokers in the United States, little concerned with the final destination of their output. The premium on American exchange has been an added attraction the last four or five years, and hence the Canadian exportation of fish to the United States increases by leaps and bounds.

What other excuse could be offered for the fact that the value of fish exported to the United States in 1914, was \$5,644,355 while last year (1919-20) it amounted to \$17,180,250? The increase in the value of canned salmon sent into the United States since 1914 is startling evidence of the trend of trade. In the year 1914 canned salmon sold to the neighboring republic was worth but \$115,360 while during the last fiscal year Canada exported to the United States canned salmon to the value of \$12,067,319. Again, observe the increase in our sales of dry salted cod, ling, hake and pollock, a large proportion of which is re-shipped by the United States to the West Indies and Latin-American countries. In 1914, this trade was valued at \$1,131,347 while last year it brought a revenue of \$4,007,887.

No doubt it is an easy and safe method of doing business to sell to the United States and get the benefit of the premium on American dollars, and let the United States supply outside markets with *our* goods. As was pointed out recently in a statement issued by the Canadian Bank of Commerce on foreign trade, Americans are far-sighted enough to look to the future when exchange rates will be normal, while Canadians are resting content with immediate lucrative returns, leaving the future to take care of itself. Their faith is abnormal. Is it not patent that the United States is capturing the markets of the world, largely through the generous support of Canadian producers? When world-wide trade conditions settle, where will Canadian fish producers be? They will be unacquainted in foreign markets. Americans will have the patronage of foreign buyers and Canadian *must* then sell through the United States.

Now, really, is the opportunity to shake this system of employing the United States to act as broker for Canadian trade. The premium on American exchange gives Canadians a strong advantage in foreign mar-

kets and our fish exporters are in a position to underbid their American competitors, if they want to, just to the extent of the premium on U.S. funds. Authorities on trade insist, and it does require deep reasoning to reach the same conclusion, that Canadian houses should not hesitate to undersell Americans in foreign markets and forego an additional profit which they could take by selling to the United States and letting her feed the ultimate market.

Canadian fish exporters hold the whip hand. Now if they will only use their advantageous position to accomplish something. They must get down to hard pan. American exporters do not hesitate to meet the demands of foreign markets as to peculiarity of preparing and packing fish, or idiosyncrasies of trade. They realize they must do it to keep the trade. Canadian exporters may dispense with all this trouble by utilizing a series of brokers, mostly foreign, who take this weight from their shoulder. But will it pay in the end?

Financial experts who have given study to the situation advise Canadian business firms generally to furnish C.I.F. quotations where requested. Fish producers have been loath to do this because they figure the scheme precarious because of the fluctuation in freight and insurance rates, and the difficulty of getting advance information on the same. The trade is earnestly urged to take the trouble to sell direct to the consuming country, if possible; to quote C.I.F. to nearest seaport where requested; and, which is very important, to send samples without charge to the prospective buyer. If it is not found desirable to quote C.I.F. on the basis of the currency of the country, goods may be quoted on the basis of Canadian dollars, American dollars or pounds sterling. Foreigners, it appears, are as a general rule more conversant with exchange conditions than are most Canadian firms. Warning is given, however, that advantage should not be taken of the premium on U.S. dollars to boost quotations to that extent.

Canada, because of her splendid war record, is held in the highest respect and esteem in all quarters of the world, and hence enjoys a unique position in the matter of foreign trade. Reports from the continent of Europe, from the Antipodes and from the Far East indicate a most friendly feeling toward Canada. Without doubt there is not another country in the world which enjoys the same sentimental preference. On top of all this, however, investigators note with chagrin and alarm, that the countries they visit are actually



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The Secretary,

CANADIAN FISHERIES ASSOCIATION

GARDENVALE, Que.

MARKET YOUR FISH DIRECT

(Continued from Page 162)

alive with American agents, while very seldom a Canadian agent is encountered. The advantage of sentiment in our favour may not continue long and a year or two hence may be too late for activity. Procrastination may be costly.

It might be opportune here to dwell on the words of a financial expert who recently advised different branches of trade to co-operate among themselves for the purpose of maintaining a representative or sending an investigator to study conditions in foreign markets, the peculiar requirements of the people and their methods of doing business.

Apropos of the matter under discussion, the Canadian Trade Commissioner in Rio de Janeiro, Brazil, stated recently that he had a number of inquiries for Canadian fish, particularly dry salted fish, and intimated that the system Canadians have doing business through American brokers, makes it difficult to take advantage of these requests. At least two firms in the Maritime Provinces have broken away from this slothful system and have been given assistance by the Publicity and Marketing Division, Fisheries Branch, Department of Marine and Fisheries, Ottawa, in securing reliable agents so as to work up a direct trade. Similar assistance will be given to all who request it. In fact any information regarding foreign markets will be secured if it is within the range of possibility to do so.

Trade Commissioner B. S. Webb recently attracted attention to the same matter with reference to the Argentine Republic. Canadian fish are being sold

there. As a matter of fact Canadian lobster is in big demand. But it is not known as Canadian lobster, being packed under a London or some other trade mark. If the same article were sent with a Canadian label, Argentinians would be skeptical about using it. One more tell-tale of our fallacious system of sales.

Now is the time to buck up. A year later may not do. Who will admit that Canadians are not possessed of as much business ability and energy as Americans? Then why let our good neighbour step in and act as our broker and do our foreign business for us; and not only rob us of our commercial pride, but relieve us of a neat profit?

The Canadian fisheries last year, from the standpoint of revenue, reached the peak of success. The catch exceeded \$60,000,000 in value, while the export trade was worth \$40,687,172. The foreign trade showed an increase of more than one hundred per cent over that of 1914, when it was valued at \$20,130,605. This increase should have been the source of tremendous satisfaction were it not for the fact that such a large portion of it went to the United States for re-export.

Fish imported into Canada in 1920 was valued at \$3,491,579, while in 1914 it was \$2,172,900, and in 1919 \$2,497,054. The importation from the United Kingdom decreased nearly fifty per cent last year as compared with 1914; while the importation from the United States increased nearly a hundred per cent during the same span of years. But we do not re-export our purchases from the United States. No. We eat their fish. Canada is the direct market in this case.

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A RARE FISH.

By Prof. Arthur Willey.

The occurrence of manstrosities is not common amongst fishes in the wild state, so that any kind of abnormality, produced naturally, has at least the interest of its rarity. In addition, all deviations from normal structure are subjects for theoretical interpretation and still better for experiment, given the opportunity. In young fish reared in hatcheries a great deal of Siamese twinning of various degrees may be seen at different times and places, but such immature deformities are weaklings and rarely attain adolescence. Double-tailed goldfishes, domesticated in China and Japan and, since the end of the seventeenth century acclimatised in all civilized countries, take high rank amongst our cold-blooded pets. It has been said that the gold fish is to other ornamental fishes what the canary is to any other cage birds. In the variety with eyes bulging out of the head, known as the Telescope Goldfish, the back fin may either be present or absent.

With the exception of eels, all the most important market fishes have two sets of paired fins in addition to the median back and tail fins, namely, a pair of pectorals or breast fins and a pair of ventral fins, as in pike an herring, cod and perch. The position of the ventral fins is not constant in the different families, but their presence is constant where they belong. Very rarely a fish is taken which lacks its full complement of fins and when this happens it is usually the ventral fins that are missing. A staggering impression is conveyed to the observer when one hand-

les for the first time a familiar fish devoid of the ventral fins which are proper to it.

In the streams flowing from the south into the expansion of the St. Lawrence river between Montreal and Quebec known as Lake St. Peter, in the waters of Lake Champlain and elsewhere in the eastern States, there lives a low caste fish called the bowfin, mud-fish, or poisson castor. Its zoological name is *Amia calva*. It is the sole surviving species of an ancient family whose other members became extinct in Tertiary times. Although not esteemed as a food-fish, the flesh being reputed coarse, yet it is perfectly wholesome and is sometimes put upon the market. Its nesting habits and breathing powers are remarkable, but fish-culturists reckon it a pest for its voracious appetite.

Last November it happened that one day a male bowfin, caught in the Richelieu river, was brought to the market at Montreal and eventually came into my hands. It was a fine, well-grown fish, twenty inches in length, perfectly sound but with no fins on the belly. These are normally situated in the abdominal region a little farther back than in the carp. *Amia* somewhat resembles a carp outwardly, and was at one time believed to be related to the carp family, or else to the herring family, until certain qualities of head and heart showed that its affinities with the modern bony fishes were remote. As a member of the Canadian fish-fauna it is a notable figure, but as a contributor to Canada's food-resources it has not made good. The aberrant specimen was exhibited at the Natural History Society of Montreal on February 23 last.

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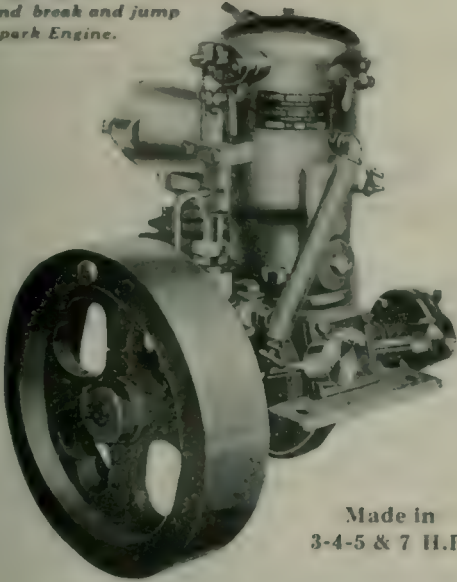
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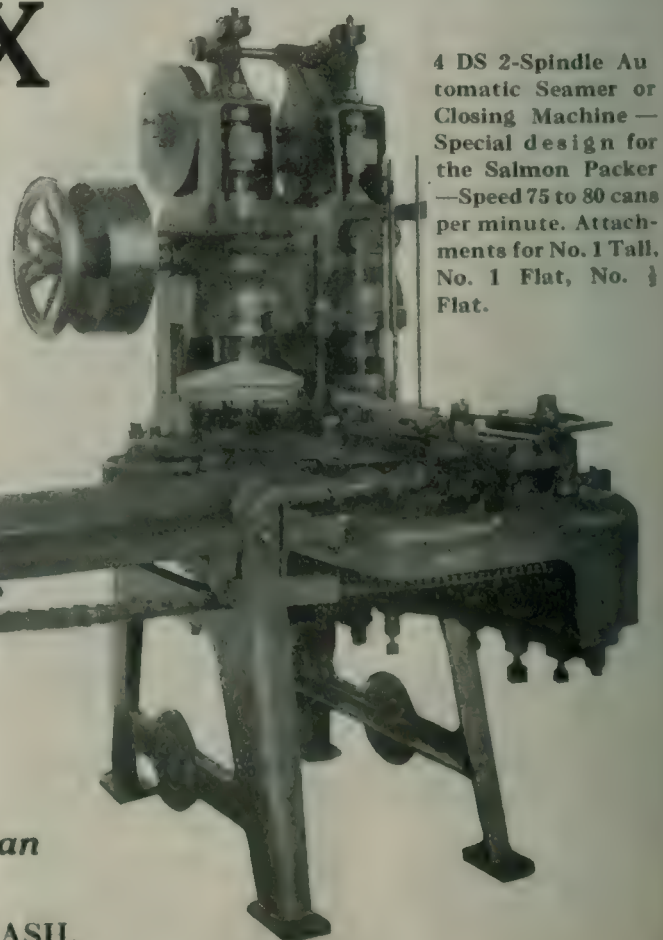
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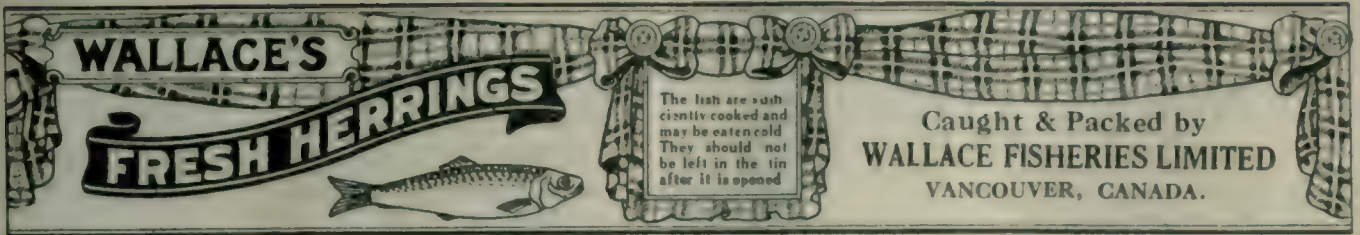
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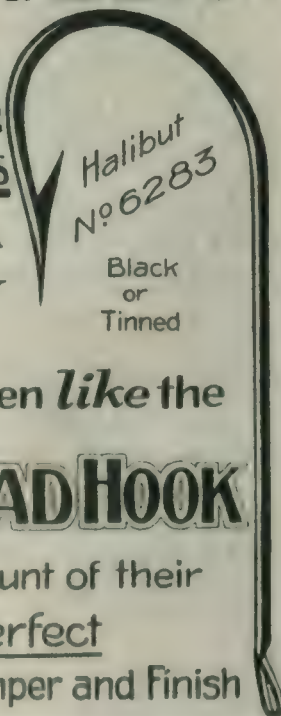
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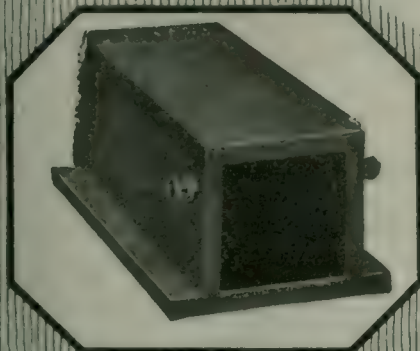
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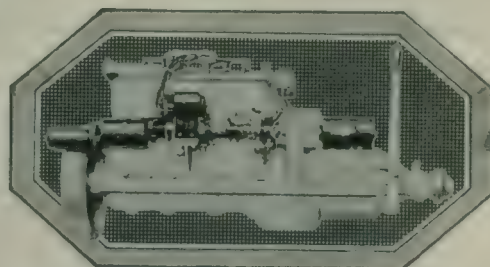
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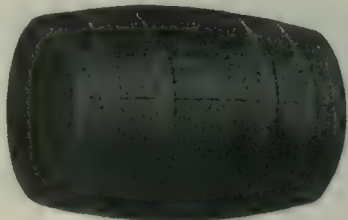
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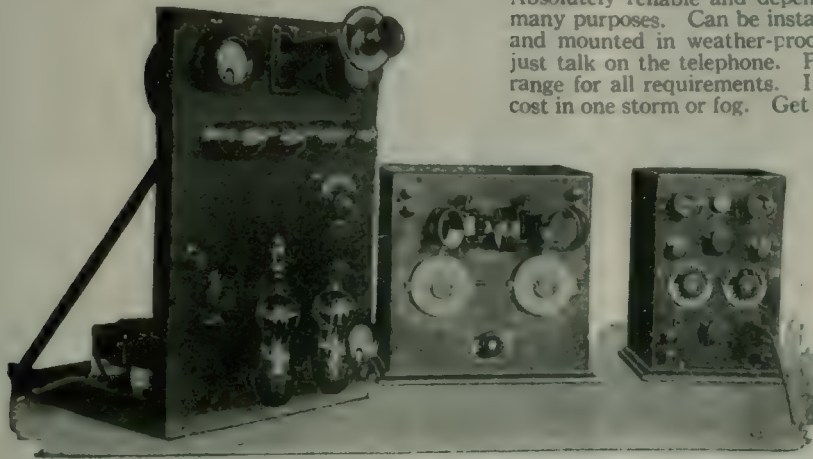
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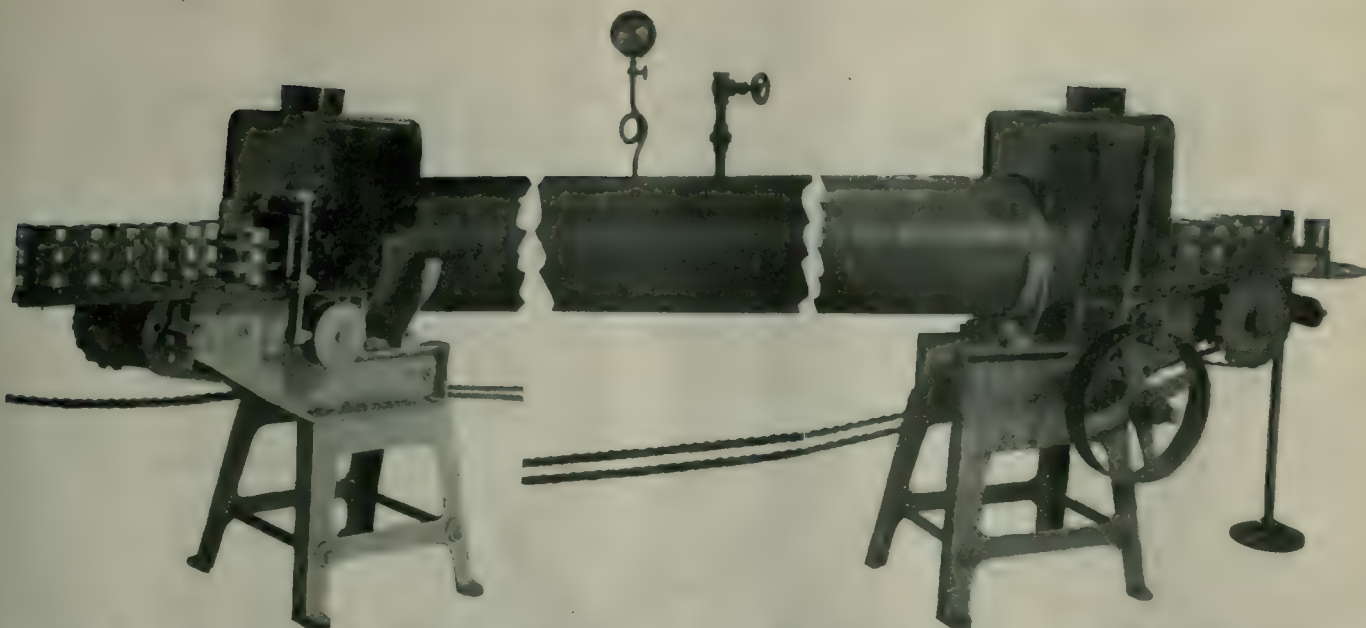
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Official Organ of the Canadian Fisheries Association

VOL. VII.

GARDENVALE, P.Q., AUGUST, 1920

No. 8

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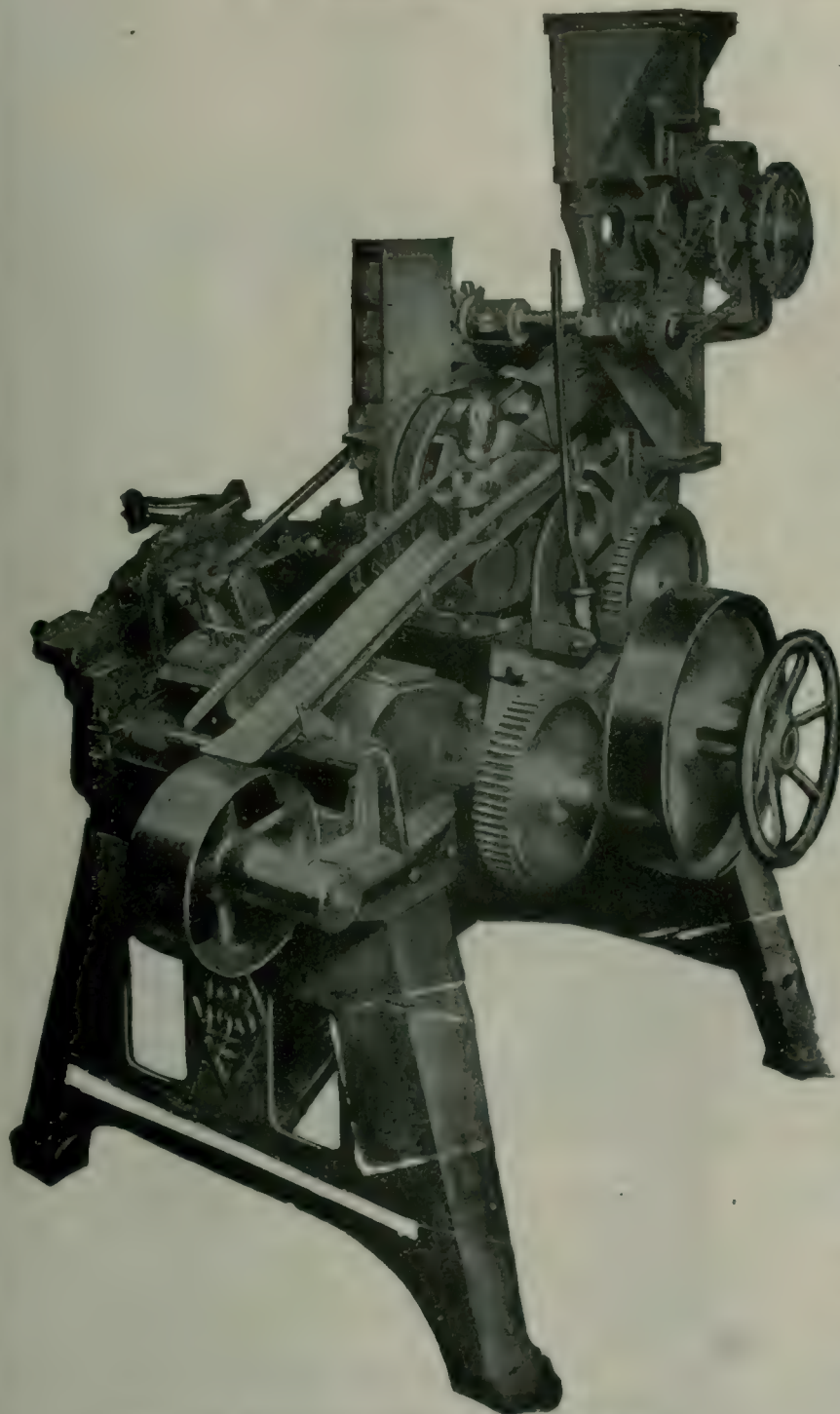
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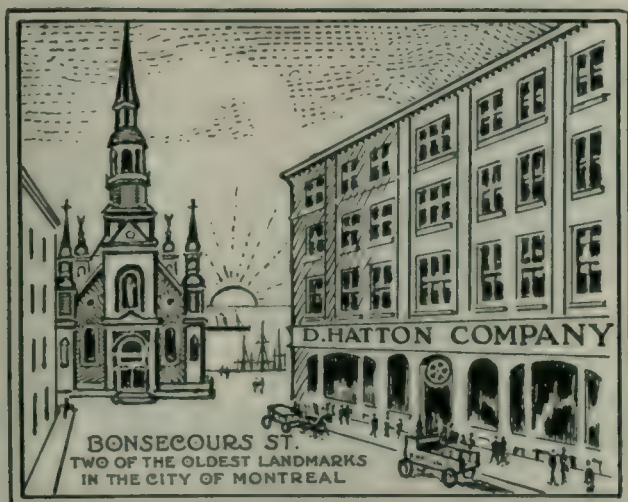
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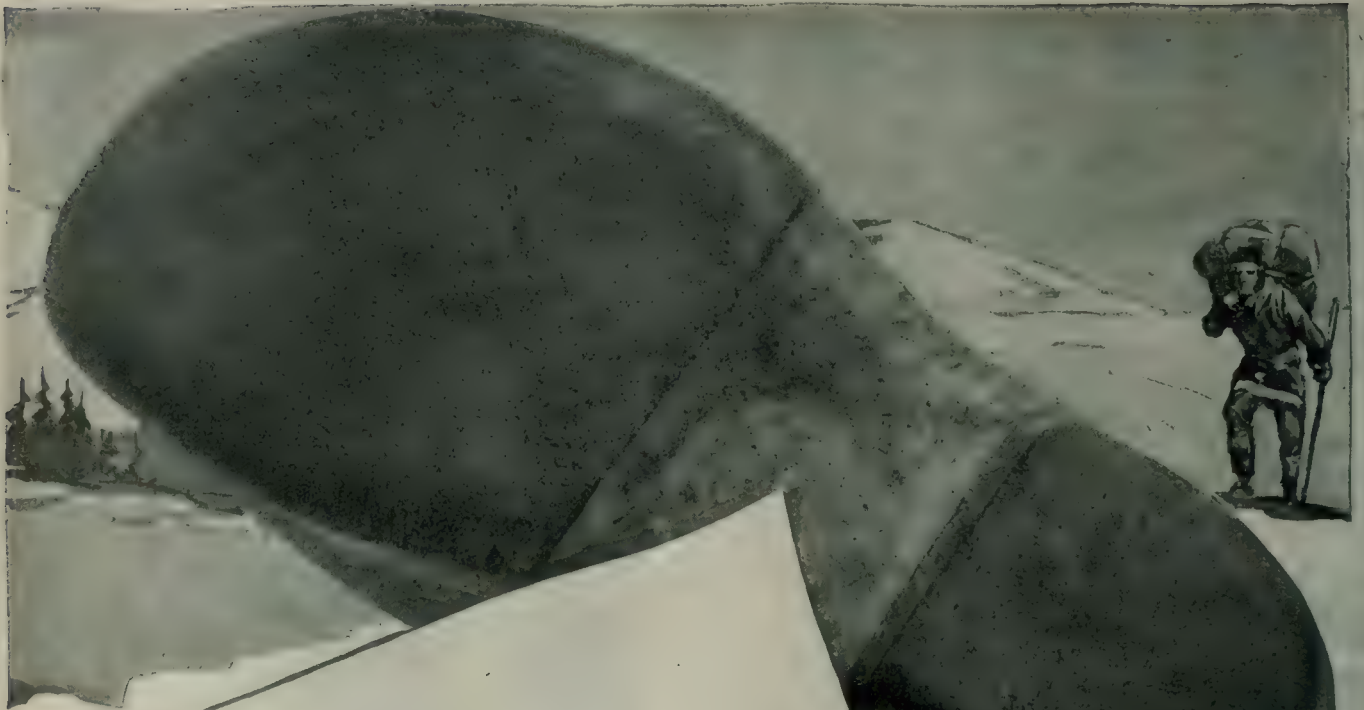
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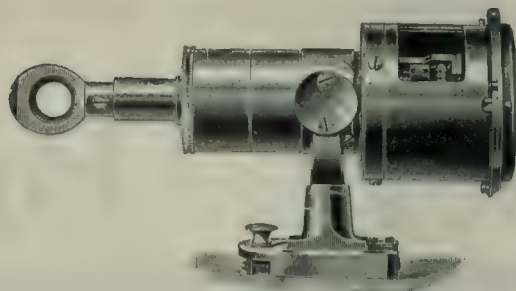
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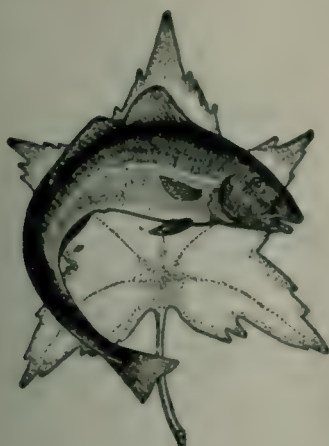
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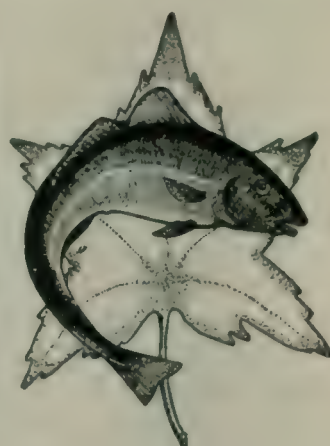
RAILWAY SUPPLIES

EDITORIAL

AUGUST 1920



FREDERICK WILLIAM WALLACE
Editor



ASSOCIATION WILL PROTEST INCREASED EXPRESS RATES.

The hearing of the Board of Railway Commissioners to decide if the allied Express Companies are entitled to a general increase of forty per cent will open in Toronto on September 2nd. Sessions will be held from coast to coast.

The Transportation Committee of the Canadian Fisheries Association will strongly protest the increase of rates on the express carriage of fish, and D'Arcy Scott, K.C., of Ottawa, and a former railway commissioner, has been retained by the C.F.A. to handle their case. The Department of Marine and Fisheries will also co-operate with the Association in opposing a general increase.

A good many members in the fish business do not appear to realize the far-reaching effects of the proposed increases in freight and express rates if granted. To deceive oneself with the idea that it will amount to a mere bagatelle of a fraction of a cent per pound on the fish is erroneous. An increase in transportation rates will go much further back, and be considerably magnified after passing along from hand to hand. A general increase, in the opinion of the Association's traffic experts, will mean a rise in the cost of the fisherman's equipment and living. Fuel-oil, lines, nets, gear, flour, boxes—in fact, everything into which rail haul plays a part—must necessarily go up, and when percentages of profit are added to cost plus carriage, the selling price is considerably magnified.

"Pass it along to the consumer!" some will say. That may work in some lines, but it is not a good policy in the present condition of the Canadian fish trade, where there seems to be plenty of fish and very little market, and what market there is at very low prices. Fish is different from most eatable commodities. It has a maximum price and just as soon as it

exceeds that price, the consumer refuses to purchase. Fish, in Canada, is not yet in the indispensable class, like meats and eggs. The Association's ideal is to make fish the economical substitute for meats and to build up a trade by marketing the product at popular prices. Only by volume of business can the fishing industry expect to make fair profits.

Transportation has been the prime detriment to building up the greater consumption of fish in Canada. Rates are high, facilities are poor, and a great measure of the present home trade has been built up through Government transportation subsidies. Increasing the rates will not assist in developing the fishing industry, and the present rates are high enough.

The granting of these increases should be considered according to their effects upon basic and essential industries. A vast number of commodities can stand an increase in rates, but there are others which should not be made to suffer under a general increase in transportation. The fishing industry is one of them. Low prices are driving our fishermen away from the industry. A steady rise in the cost of his gear and living and the feeble market for his product is not encouraging him to remain fishing when high wages are being paid shore labor. Among the wholesalers and distributors, the condition of "getting by and nothing more" exists, and one will find no millionaires in the Canadian fish business.

This is no time to increase fish transportation rates. Fish is required as a cheap flesh food to offset the soaring prices of other eatables; the fisheries need development as a source of revenue to the country and as an occupation for encouraging a seafaring people. Increasing the price of transporting the fish to market is placing another burden upon an industry which needs fostering and encouragement more than anything else.

AN INTERESTING BLUE-BOOK.

It has been said by some wit that reading Government reports gives one a thirst—they are so dry. There is a good deal of truth in this assertion and it would appear that the compilers of Civil Service reports record Departmental and Administration activities in language severe, formal and reserved. Our Canadian fishery reports could be made wonderfully interesting if an experienced journalist were allowed to do the compiling.

The lead, however, has been taken by the supposedly severe and staid Department of Agriculture and Fisheries of Great Britain. Under the title of "Fisheries in the Great War"—being the Report on Sea Fisheries for the years 1915, 1916, 1917 and 1918—it has issued a Blue-Book which requires only a stiff cover with a striking design on it to place it in the ranks of privately published records of thrilling deeds and heroic endeavour.

Henry G. Maurice, Secretary of the Board, is presumably the author, and in his preface he remarks: "The recognition of the fishing industry as one of the vital industries of the nation is so important that no apology is offered or should be needed for any departure in the present volume from the old traditions of official reserve, for the endeavour which has been made to import, here and there, into the narrative something of the independent spirit of the fisherman, something of his ironic humour and something of our own enthusiasm, nor for veiling the official title of the volume with one less suggestive of the Blue Book, in the hope that the British citizen may be induced to acquire it instead of passing it by as dull and unreadable."

The Report describes in clear literary style the various handicaps placed upon the British fishing industry through the commandeering of ships and men by the Admiralty; the part fish played in feeding England during the blockade, and most interesting of all, the heroic fights between British fishermen and German submarines. Altogether, this British report is the best Fisheries Blue Book we have yet read.

In Canada, we have fisheries which are diverse and of immense potentialities and the history of the year's work in the industry contains sufficient romantic incidents and interesting departures to provide material for a Blue Book which, if properly written and attractively printed, could command a circulation far beyond the few who are at present interested in the annual reports. This wider circulation is what our fishery reports and the industry requires. Government reports should be instructive and illuminating to the man-in-the-street as well as to the directly interested individual. Readable Blue Books can be used as beneficial propaganda of the best kind and the Fishing Industry needs such.

ADMIRAL LORD JELlicoe's REPORT AND THE FISHING INDUSTRY OF CANADA.

The Report on the Naval Mission to Canada by Admiral Viscount Jellicoe of Scapa recently issued contains much that is interesting to the fishing industry of Canada. The Report deals with suggestions for the Naval Defence of the Dominion and the reader is struck by the Admiral's appreciation of the value of the fishing industry to the country in peace and war.

Referring to the important department of mine-sweeping, Viscount Jellicoe reports:—

"It is very desirable that Canada should become independent of outside assistance in the work of mine-sweeping. The simplest, and by far the cheapest, method of obtaining in war the services of efficient mine-sweeping vessels is by the encouragement of a trawler fishery service on both the Atlantic and Pacific Coasts during peace. Steam trawlers are already operating on both coasts and have proved to be commercially successful. *This matter is of such importance on economic grounds that I beg to draw special attention to it.*"

We have italicized the last sentence that it may be specially remembered by those who have the development of the Canadian fisheries at heart. The development of a steam trawling fleet in Canada rests entirely in the utilization of these craft for salt fishing purposes. A fleet of five or six trawlers at the present time can more than fill all the home markets demand for fresh fish, and if a trawler fleet is to be created in the only avenue now existing, viz: salt fishing, then some Government encouragement will be necessary to induce Canadian firms to operate such expensive craft instead of the sailing schooners and line fishing presently employed.

This may be done in several ways. (1) By the Dominion Government paying part of the cost of construction inasmuch as trawlers fit for naval service will require base-rings and strengthenings for gun mountings; wireless apparatus; holds convertible for the accommodation of naval ratings; certain dimensions and engine power suitable for naval work, etc. (2) An annual retaining fee. (3) A bounty on the fish landed in such trawlers.

Other inducements could be suggested and this might well be looked into primarily by the Committee which Viscount Jellicoe suggests in his report and which reads as follows:—

"It is proposed that a shipping committee comprising representatives of ship-owners, fishery firms, the Marine Department and the Naval Staff, should meet periodically to consider questions of general development of marine resources. Their functions would be purely advisory in peace, but in war they would take control of shipping—their chairman acting as Shipping Controller."

A further suggestion by the Admiral reads:—

"A member or branch of the Naval Staff should be concerned with trade and fishery questions and the

war training and constructional work involved."

The Admiral further recommends that "designs of fishing craft should be encouraged along lines tending to efficient auxiliary vessels for naval use in war-time, so far as is consistent with their ordinary work."

These recommendations indicate an important line of action for our Government to work upon.

THE TOLL OF THE SEA.

The annual memorial service for fishermen lost at sea was held at Gloucester, Mass., on Sunday, August 15th, and the beautiful ceremony of strewing flowers upon the water as a tribute to those who died in Gloucester's fisheries was carried out after the memorial service.

Gloucester's tribute to her lost fishermen has become famous throughout the world, and one of the most impressive passages in modern literature is Rudyard Kipling's description of the service in his "Captain's Courageous."

The roll of the dead for the year 1919 is twenty-three men, and of this number seventeen were natives of Nova Scotia, two were Newfoundlanders, two were natives of France, one Portuguese from the Azores and one native-born American completed the tally of those who lost their lives or died while prosecuting the fisheries out of Gloucester.

Gloucester's roll of the dead invariably strikes home in Nova Scotia and Newfoundland more than it does in Gloucester itself. The men who man the Gloucester fleets are largely Canadians and Newfoundlanders, but it is pleasing to know that Gloucester's citizens pay their impressive and beautiful tribute to the fishermen lost from her port, irrespective of their nationality.

There is something indescribably sad in losing a shipmate through the perils of the sea. The suddenness of their going out into the Great Beyond makes realization of their loss difficult and the empty bunk, the vacant place at table, the flag at half-mast, and the dory without a crew all have a tragic significance to the others.

"Astray in the dory" takes a yearly toll, and is probably the most appalling of all fishermen losses. The victims leave the vessel in the bustle of "swinging 'em over" and pull off to their fishing berth with cheerful chaff and banter. Fog or sudden squalls come down and they fail to return. Hour after hour, the vessel combs the sea looking for the lost dory until at last the skipper reluctantly admits what he fears. "It's no use. They're gone." Gone! Aye, slipped out quietly, but no one dare imagine how they died!

Just as dreadful in another sense is the toll of strenuous action, when, in a reefing or furling job a man is swept overboard and drowned. Clad in heavy boots and oil-skins, the victim, washed from the main-

boom foot-ropes, or off the exposed quarter by a boarding comber, has but little chance, and generally goes down ere his shipmates can swing a dory over to save him. In this case, the tragedy is visible and possibly less poignant than the quiet slipping away and never returning. Imagination conjures terrors in an unknown and unseen end.

The driving stem of the steamer crossing the Banks still remains a menace to the fishermen, and in 1919 six Canadians went to their last harbor through their vessel being run down and sunk. In this case, death came hurling out of the mist and ere the schooner's crew had time to even realize what had happened, they were struggling for life in the chill waters off Sable Island while their vessel was being ground to splinters under the bows of a large liner. Two brothers, one the skipper, and fine fellows both, went "West" together that time, and the writer, penning this tribute voices his regrets in a personal way, having lived and worked in company with them during strenuous days at sea some years ago.

The grim reaper takes his toll in many ways, but invariably he plucks his victims suddenly and without warning. Maybe it is better thus, and theirs is a splendid glory in passing out with boots and oilskins on in the flush of life, and finding a last resting place in the clear green depths upon which they lived and toiled. No head-stones mark their graves, but the flowers cast upon the sea by the mourners in Gloucester are laid upon the mighty burial ground of the ocean and perchance a friendly drift may carry the blossoms to where they lie. Who knows? It is a pleasing fancy.

The list of the dead is as follows:—

Patrick F. Murphy, 35 years old, single, native of Windsor Lake, N.F., one of the crew of sch. Christine Cox, drowned in dock January 28.

Stephen McLean, 74 years old, widower, native of Guysboro, N.S., died at the Chelsea Marine hospital, February 15.

Lawrence Chevette, 54 years old, native of France, single, died at sea on board sch. Morning Star, March 17.

Jose Pedro dos Santos, 34 years old, native of Western Islands, single, one of the crew of sch. Flora L. Oliver, washed from the mainboom off Seal Island, N.S., April 17.

Frank Depaquar, 30 years old, native of France, one of the crew of sch. Catherine C., fell overboard in Gloucester harbor May 19, left widow and two children.

Lee Parish, 53 years old, native of Maine, single, one of the crew of sch. Helen B. Thomas, died on board the vessel off Provincetown, June 28.

Capt. Percy Ross, 30 years old, native of Digby, N.S., left widow; Ainsley Ross, 27 years old, native of Digby, N.S.; James Gardner, 50 years old, native of Argyle Sound, N.S., widower; Thomas Meuse, 42 years old, native of Belleville, N.S., left widow and eight children; Fred Fitzgerald, 25 years old, native of Comeau's Hill, N.S., single, and Joseph Harris, 28 years old, native of Comeau's Hill, N.S., left widow and three children, part of the crew

of sch. Francis A., drowned by the vessel being run down by the steamer Lord Downshire off Sable Island, August 23.

Walter Brown, 28 years old, native of Nova Scotia, single, and Edmund Muise, 32 years old, native of Belleville, N.S., single, two of the crew of sch. Ethel B. Penney, went astray in their dory in a squall in South Channel, October 23.

Thomas Scott, 35 years old, native of Nova Scotia, single, one of the crew of sch. Athena, went astray in his dory in a squall in South Channel, October 23.

Fred Richards, 32 years old, native of Nova Scotia, single, Elsid Muise, 27 years old, native of Nova Scotia, single, Moses Surette, 26 years old, native of Yarmouth, N.S., single, and Henry Merchant, 35 years old, native of New Bedford, left family, killed by an explosion of the boat Gleaner in New York Harbor, November 7.

Simon Goodwin, 50 years old, native of Goldsboro, N.S., left widow and six children, one of the crew of sch. Bay State, dropped dead of heart failure on Western Bank, December 16.

Howard Penney, 52 years old, native of Nova Scotia, left widow and three children, and John H. Ernst, 55 years old, native of Nova Scotia, left widow and four children, two of the crew of sch. Benjamin A. Smith, went astray in their dory in a fog off Liscomb, N.S., December 17.

John A. Simms, 21 years old, native of Newfoundland, single, one of the crew of sch. Elk, accidentally killed on board the vessel in Boston harbor December 26.

DEPARTMENT OF MARINE AND FISHERIES.

Sea Fishing Results for Six Months, January to June.

The official returns show the total quantity of sea fish landed on both coasts during the January-June period of the current year to have been 2,837,324 cwts., against 2,546,773 cwts. for the same period last year. The total value of the catch at the point of landing this year was \$10,564,146, against 9,393,495. This gives an increase of 290,551 cwts. in quantity and \$1,170,651 in value. The weather was not so favourable this year as last. It may be of interest to note the of the total catch for the first six months of 1920, 1,974,362 cwts. valued at \$7,294,459 were taken from the Atlantic and 862,962 cwts. valued at \$3,269,687 from the Pacific. Of the total catch for the same period in the preceding year 2,048,148 cwts. valued at \$9,393,495 were taken from the Atlantic, and 498,625 cwts. valued at \$2,437,780 from the Pacific.

A comparison of the landings of some of the chief kinds shows cod to have dropped by 64,000 cwts. It should be noted, however, that Nova Scotia alone gave an increase of 30,000 cwts. The other provinces were responsible for the decrease. The haddock catch was less by 20,000 cwts. and the mackerel catch likewise by 48,000 cwts.

On the other hand there was an increase of 10,000 cwts. in the catch of hake and pollock, and of 50,000 cwts. in that of lobsters; the lobster catch being 331,662 cwts. against 281,254 cwts. Herring gave an increase of 293,545 cwts. This was due mainly to the landing of much greater catches in British Columbia during January and February. Notwithstanding that operations on the Pacific were interrupted to some ex-

tent by reason of a shortage of refrigerator cars at Prince Rupert, during March and April, the halibut catch for the six months period this year was 2,500 cwts. greater than that for the same period last year.

There was an increase of 27,000 cwts. in the catch of all kinds of salmon. The whole of the increase came from British Columbia waters. The Atlantic salmon catch fell below that for the preceding year, and very much below that for 1918. The catches for the three years are: 6,000 cwts. this year; 8,400 cwts. last year; and 14,600 cwts. in 1918.

NEW BRUNSWICK FISHERIES.

Fishing on the North Shore of New Brunswick this summer has been fair. Many dealers have received larger supplies than they have needed for current trade and have also larger salt stocks than is usual at this time of the year. Even at present unsatisfactory prices a greater production of fish could have been maintained if there had been any certainty about future market conditions.

At St. John the commercial salmon fishing this season was light. Fish landed were of fine quality. The bulk of the catch was disposed of in local markets at high prices.

The sardine fishermen of St. John and Charlotte Countries have been up against bad luck this season so far. About a dozen of the big Maine canneries closed down early in July for lack of tin and Connor's Brothers of Black Harbor have had to restrict operations for the same reason. In mid-August some supplies of tin were obtained, and most of the canneries resumed work. At the opening of the season their owners were demanding \$20 per hogshead for sardines. Canners were not disposed to give this price, and nearly all were late in starting operations. When the shut down for lack of tin occurred the price was \$10. So the season so far has been unsatisfactory. Sardine schools have been abundant on the New Brunswick Shores, but the factory at Chamcook and the Booth factory at St. John have remained closed. Quantities of larger herring taken in the sardine weirs have been salted, but the demand is light and prices low.

One New Brunswick firm is buying large quantities of Nova Scotia herring, but more with the idea of keeping their plants employed than making money. This firm believes that if trade is resumed with Russia, that country will take large quantities of pickled fish from countries in the North Sea, and that Canada, will be largely freed from North Sea competition in the United States and southern markets. If the Russian blockade is continued, they do not think the fish business will be very brilliant in the near future. In spite of the high prices of other goods they do not find it easy to sell fish, with two travellers on the road continually in Canada and one in the States, while they have extensive connections in the U. S. they find that Canada offers them the best market by far.

DROWNED IN HIS DRIFT-NET.

St. John, N. B., August 12.—Charles A. Forbes, aged 19, was drowned in Gardner's Creek, St. John County, last evening while putting out a drift net. The body was recovered this morning in fifteen feet of water and all entangled with rope.



A Sailing Race Between American and Canadian Fishermen

America's Cup Farce Calls for a Contest Between Real Sailing Craft and Sailormen.

Canadians do not feel that the America's Cup stands for the supremacy of the seas under sail. Even the Americans feel that the boast is a hollow one. And those who know something of what our North Atlantic fishermen can do in the way of sailing want to see a real contest between real sailing craft and real sailormen.

A number of letters in Montreal and Maritime Province papers give an idea of how some people feel about it, and Colin McKay, sailor-author, and well known to our readers, expresses his ideas in the Montreal Star thus:—

A REAL SEA RACE.

The Editor, Montreal Daily Star.

Sir,—Why not a fishermen's race between Canada and the United States?

By contrast with the tame performances of the fair-weather freaks off Sandy Hook, a race between the able fish vessels of Nova Scotia and New England in a real breeze of wind would be likely to attract attention and prove an advertisement of incalculable value for the fisheries.

Besides, an international fishermen's race would be a fitting way of commemorating the Fisheries Treaty which, it is to be hoped, will be concluded in a short time now, and will, if the recommendations of the Canadian-American Fisheries Conference is followed, provide an amicable adjustment of questions which have been a bone of contention for over a century.

The Governments of Canada and the United States might very well be asked to put up a stake for such a race. They could hardly find a better way of spending money to secure publicity for the fisheries. They could not find a better way of advertising the great object lesson which they are able to offer the world—their ability and determination to settle their differences by arbitration and to live in friendly rivalry.

The rather sarcastic comment on the recent America Cup races in many United States papers show that many people would welcome an international race between sailing craft built for a practical purpose. The New York Post says: "The contest of 1920 proved nothing except that we can build a boat that can pile on canvas in light breezes and beat the best machine

of the same type that can be produced on the other side of the Atlantic. It is to be hoped that a like contest will never be seen again, and that by the time the next challenge comes the sailormen and the naval architects will have found a set of conditions which will bring about a match between sturdy boats able to race in any kind of weather." The New York Globe refers to the cup racers as "paper-napkin" boats, and suggests that the race would be more exciting if they had been sailed in a bath tub. The New York Sun comments upon the postponement of a race because of a twenty-five knot breeze was blowing, asks when real sailormen were ever afraid of a twenty-five knot breeze, and observes that Gloucester fishermen would only delight in such a breeze.

If the Canadian yacht clubs want a real race let them build a fishing vessel and challenge the American clubs to build a competitor and run a race in the fall of the year over a course long enough to bring out the capabilities of the boats. The only condition need be that the two boats have the same length of water line, and the same sail plan as they would have when they entered the fisheries. The vessels would, of course, be sold later to the fishing industry.

Possibly the present type of fishing vessel sailing out of New England and Nova Scotia represents as perfect an adaptation to a particular purpose as is attainable. At the same time the attention which such a contest would focus upon the models and rigs of fishing vessels might result in improvements of material advantage to the fishermen. In any case, such a race might throw a valuable light upon the problem of developing the new conditions of yacht racing which by general consent are demanded in the best interests of real sport.

It is worth recalling that the fastest clipper ships that ever sailed the seas were built by a native of Nova Scotia, and that the greatest day's run under canvas was made under the joint command of a native of Nova Scotia, and a man who learned how to carry sail aboard New Brunswick built clippers.

C. McKAY.

A writer, signing himself "Canadian," writes in the Montreal Gazette along similar lines:—

A RACE FOR REAL SAILORS.

To the Editor of The Gazette:

Sir,—If we sense aright, the millionaires' frolic of fooling with costly devices designed to outdo each other in the water has about spent itself in the last attempt of Sir Thomas to capture the America's Cup. This is noted by one Canadian, who is glad to welcome the change, especially if it means that the sport of racing vessels on the salt water is at length to be made to show what the crew, rather than the vessel, or a more happy blend of both, are capable of doing.

With all deference to Commodore Aemilius Jarvis and others of the so-called yachting experts, we are of those who, by comparison which our life has permitted us to draw, between the abilities of the yacht squadron sailor and the real blue water men accustomed to schooner-rigged vessels, have formed an opinion in which only the amenities of good nature could find much to be said for the former. They lend grace and interest to one of the finest of sports, and that is the best that can be said of them. As for genuine craftsmanship and all the natural and acquired abili-



American Schr. "Helen B. Thomas"—a contestant for the Lipton Fisherman's Cup some years ago.

ties which go to make a real sailor, whether his vessel is racing for a cup or racing for the fishing banks, they possess but very little. Indeed, it is not improbable that the best sailor which any of our Canadian yacht squadrons can show would only provoke a smile if made to try his hand on the deck of a Grand Banker, under conditions calling for a sailor's instinct and knowledge.

It is with these hazy ideas of the past still not dead in our mind, that we offer to suggest, as the best possible exercise of Canadian craftsmanship, in a test which would be calculated to arouse the most friendly rivalries and the most keen interest in the United States and Canada, that encouragement be given to the suggestion of the mayor of Lunenburg, Nova Scotia, that an international race be arranged for vessels of the fishing type, to be manned by Nova Scotians on one side and Americans on the other. This would not only do away with the over expensive foolery of building fair weather craft for racing purposes only, but would invoke the interest of one of the greatest

paces of sailors that the world has ever seen, namely the fishermen of the North Atlantic ocean.

CANADIAN.

Montreal, Aug. 11, 1920.

To this, the Editor of the *Canadian Fisherman* has added his contribution:—

Editor, Gazette, Montreal:

Dear Sir,—A letter in today's Gazette suggesting that a race for the America's Cup be contested by



(Photo, Wallace.)

Sixteen knots in a breeze of wind! A fisherman being driven.

fishing schooners of Canada and the United States is of interest to lovers of the sea and fast sailing vessels, and the idea has much to recommend it. It is doubtful, however, if the rules regulating America's Cup contests would permit of commercial vessels being allowed to compete.

In the public mind, the America's Cup is supposed to stand for the utmost in the design and handling of sailing craft. In the minds of professional seamen, the Cup has lost its standing in this respect, and the shell-backs look upon it as a trophy for sail-driven "freaks" built to ghost along in the light airs of

summer. As a test of national seamanship and vessel design, the Cup does not stand for the best that is native to either the United States or the British Empire.

The present cup is a yachtsman's cup. Let it remain so; but why not have a trophy presented for contest between commercial sailing vessels and their crews? This could be competed for by sailing coasters, fishing vessels, pilot-boats—in fact, any craft driven by sail and employed commercially. There may be considered variation in the types of vessels under this head, but a committee of practical men could readily prescribe the classes eligible.

The writer has some practical knowledge of Grand Bank fishing schooners and feels certain that a very

exciting contest could be staged between Canada and the United States with these craft, and such a contest would more faithfully reflect the seamanship and vessel-designing abilities of the contestants than has the America's Cup competitions for the past twenty years.

Sir Thomas Lipton, some years ago, presented a cup to be raced for by Gloucester fishing schooners. The race which ensued was pulled off in a strong breeze by a number of schooners and was one of the most exciting ever held, and the winning schooner came in with her fore-topmast gone and her fore-gaff-topsail and balloon jib trailing alongside. It was said of this race that a Boston reporter assigned to cover the event telephoned his chief that all he could see

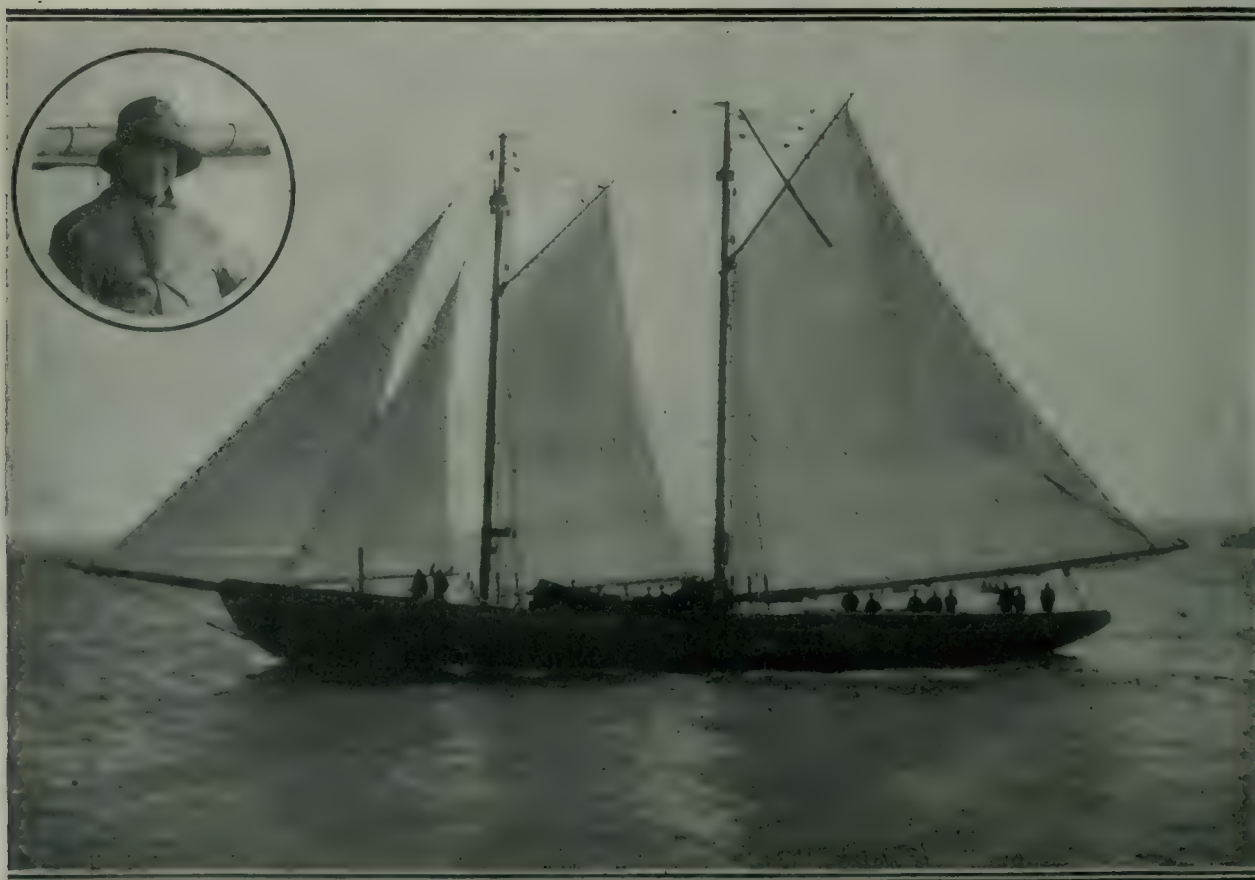


A Real Sea Boat—Digby schooner "Albert J. Lutz"—Winner of the Brittain Fisherman's Cup in 1911.



Vessels of this type favor 25 knot breezes.

(Photo, Wallace.)



A Nova Scotiaman in Winter rig, and a healthy type of fast sailing seaworthy craft.

was "a crowd of crazy fishermen trying to drown themselves!"

The Bank fishing schooners of Nova Scotia and the New England fishing ports are stout, fast-sailing vessels carrying a great spread of canvas. Their crews know how to sail them and do sail them—not for the fun of the thing, but in order to save time and money in the pursuit of their vocations. There are over a hundred such schooners owned in Lunenburg, N.S., alone, and the ports of Gloucester, Boston, Provincetown, Portland, etc., possess great fleets.

A cup or trophy for sailing races between such craft would awaken the interest of seafarers and yachtsmen and others who love the sea and sail and it

the contest be held at a season of the year when strong winds can be counted upon and let the course be long enough to call for a drive of hundreds of miles rather than an afternoon's jaunt. Sustained effort for a lengthy period is the best test for men and vessels.

Yours, etc.,

FREDERICK W. WALLACE.

Are Canadian fishermen going to accept the America's Cup races as an indication of the inability of Britishers to build and sail ships which will trim our American friends? We guess not! And it's a safe bet that the fishermen of Gloucester and Boston feel



Lunenburg, N.S., has still a few real sailing craft left able to race for the honor of Canadian seamen.

would more truly stand for the sailing supremacy of the nation which won it. In addition to the Cup, it would be necessary to provide a money prize or guarantee the expenses of the contestants—otherwise the expense involved in preparing and retaining a commercial vessel for a race would be more than the owners and crew could afford.

I think "Canadian" and McKay have struck the right idea, and if Canada would make a start in putting up a trophy and challenging the United States to compete in a race between commercial sailing vessels, a great deal could be done towards fostering the dormant seafaring spirit in the Dominion and realizing the ideals of the Navy League and other organizations striving to build up a Canadian Merchant Marine and manning Canadian ships with Canadian seamen.

And if such a suggestion is acted upon, then let

but very little satisfaction in these America's Cup races. They are an insult to their seamanship and their ideas of how a vessel should be built and sailed.

We would like to see a Cup put up for contest between Canadian and American fishermen, and we believe if the race was pulled off that it would be something vastly more creditable to our seamanship than the drifting match recently held off Sandy Hook.

A race in the Fall of the year from Halifax to Bermuda and back between as many vessels as wish to enter would be worth while. A long run will test the seamanship and ability of vessels and men, and show those who love the sea and sail that the spirit of the clipper ship days is not dead and that we have sailors and vessels of a healthy type still in existence. Here's a chance for someone to put up a trophy in a good cause.



WHO'S WHO IN THE FISHING WORLD.

Readers of the *Canadian Fisherman* will be particularly interested in viewing the features of one who's mission in life is to help the fishing industry by improving transportation facilities to markets and to increase the sale of Canadian fish at home and abroad. Our subject for this month is Mr. James H. Conlon, Chief of the Transportation and Publicity Division of the Department of Fisheries, Ottawa.

Mr. Conlon is quite a youngster amongst us—having first seen the light of day in the old city of St. John, N.B., in 1894. But he is all the better for being young, as it leaves him plenty of time to grow up with the industry and he is not old enough to have formed ideas and opinions difficult to eradicate or change. He considers himself, at present, a student,



eager to learn the fishing industry's wants and to apply himself to the solution of its many problems.

He is blessed with a journalistic training—possibly the most versatile and adaptable training a man can get—a training which teaches one to employ initiative and to avoid routine and precedents. For nearly eight years, Mr. Conlon served on the staff of the St. John Telegraph and resigned from that paper in the Fall of 1919 as news editor. In partnership with another, he promoted and published the *Business Review*—a trade journal now prospering in the Maritime Provinces. When the Department of Marine & Fisheries called for a man to take charge of a Department of Transportation and Publicity to aid the fishing in-

dustry, Mr. Conlon was selected and appointed to the position early in 1920.

Our subject has already given proof of his ability in numerous instances, and is rapidly making himself favorably known to the industry. A clever writer, a good speaker, and blessed with progressive ideas and keen for information, Mr. Conlon bids fair to make his Department one of great importance and fully appreciated by the trade in Canada.

A PACIFIC COAST WHO'S WHO.

Among the younger members engaged in the fishing industry of Canada, Charles Otis Julian of the firm of C. O. Julian & Co., packers of salt herring, Vancouver, is entitled to a niche in the Fisheries Hall of Fame for more reasons than one. Those who had the pleasure of meeting him at the Vancouver Convention felt that he deserved a pedestal all to himself.

We don't know when Mr. Julian was born or where he was educated. When one knows him one doesn't care a cuss about these minor details. Some people we write about compel us to look them up in Debrett's Peerage or in Bradstreets—according to whether their manner is aristocratic or plutocratic. But when the



interviewer hears his subject familiarly addressed as "Charley," then the inference is that he is democratic, which same is eminently desirable.

There was a day when Mr. Julian was an autocrat of the first water. When he trod the planks of certain ships in His Majesty's Royal Canadian Navy, as a "two-ring bloke," he wielded the powers of the high justice, the middle and the low over the humble "flat-feet" of the ship's lower-deck crowd. But even in the service he was democratic and claimed considerable attention from the powers-that-be by protesting against the short-comings of the Canadian Naval Service. In this, he was actuated by the best and most patriotic motives, but his charges were mis-used by

politicians and his good intentions were not given the credit they deserved.

Lieutenant Julian, in his younger days, spent considerable time in China and learned to speak the "lingo" like a native. In later years, he established the firm of C. O. Julian & Co., in Vancouver, and the firm claim to be the pioneers in packing B.C. salt herring for the Chinese trade. When war broke out, Mr. Julian, who was an enthusiastic yachtsman and a member of the first company of the Royal Canadian Naval Volunteer Reserve, volunteered his services, and for four and a half years served in the Canadian Naval Patrol on both coasts—retiring on demobilization as lieutenant, R.N.C.V.R.

Mr. Julian is a bachelor, but nevertheless a noted squire of dames. He has been characterized as the Douglas Fairbanks of the fish trade. As a raconteur, he is unbeatable and in matters pertaining to the Orient, he is an authority. That he will forge ahead in his particular branch of the fishing industry is not to be doubted. Any man who can understand the Chinese language and fathom the business mentality of the Celestial is an individual not readily daunted. Mr. Julian has our best wishes, and we are pleased to feature him in our Who's Who column.

WEST INDIAN MARKETS OFFER NEW OPPORTUNITIES.

The recent trade agreement consummated between Canada and the British West Indies besides increasing the preference has an advantage to Canadian exporters in another way, in that Jamaica, Turks and Caicos Islands, Cayman Islands, Bahamas and British Honduras were not included in the 1913 agreement, are now participants in the reciprocal arrangement.

In view of this increased preference, together with the fact that improved ocean-freighting facilities are being inaugurated, new possibilities are opened up for the Canadian fish exporter. The work of installing refrigeration space in the Canadian Government ships is progressing favorably, and this equipment may be available very soon.

The islands included under the 1913 Canada-West Indies Trade Agreement, viz., British Guiana, Trinidad, Barbadoes, Grenada, St. Vincent, St. Lucia, Dominica, Montserrat, Antigua, (also Barbuda and Redonda), St. Kitts-Nevis, Anguilla, and the Virgin Islands, imported from Canada in 1918 fish to the value of approximately \$1,000,000. From the United States during the same period fish to the value of about \$25,000 was imported, and from outside countries approximately \$100,000 worth. Additional preference would seem to furnish an opportunity of controlling the balance of the trade, and as the population in the islands in the Carribean Sea is now approximately 9,000,000 and steadily increasing, the future holds every inducement.

Of the new islands included in the recent agreement Jamaica seems to offer the premier attraction. The agreement states that in the case of Jamaica more than 75 per cent. of the regular tariff shall not be charged against Canadian goods. This 25 per cent advantage should enable Canadian fish exporters to gain a big portion of the 6,975,000 pounds of dried and salted fish, and 437,500 pounds of canned fish, which it has been estimated the island would require in 1920. The

island has a population approximating 1,000,000 and there is a splendid chance to work up an exchange of trade. The Canadian Government Merchant Marine Limited now operates a steamer from Montreal to Kingston, Jamaica.

In 1918, Canada shipped to Trinidad fish to the value of \$437,147. A large portion of this was re-directed to Venezuela. Although Canadian statistics do not show any export to Venezuela, it is understood that Canadian fish is being used there to a considerable extent, and there is a possibility of considerably increasing the market. The increase in preference in the trade with Trinidad by 30 per cent. (now 50 per cent.) should assist in the development of this area, as Trinidad supplies Venezuela.

Exporters are urged to take every advantage of the opportunity offered. If additional information is sought, the Department of Marine and Fisheries will endeavor to secure it for any individual exporter who makes application. Undoubtedly this will not concern all fish producers but a great many should be interested.

MACKEREL SCOUTING.

Work on Patrol Boats not only Valuable to Fishermen but Big Assistance, Biological Research Work.

Far-reaching results are anticipated from the innovation of the mackerel scouting service on the Atlantic coast this spring. While there is doubt as to actual results produced this year, the fishermen, for whose benefit the service was instituted, are enthusiastic, and next season they will no doubt be in a better position to take advantage of this novel service.

The patrol boat "Hochelaga," under Captain Barkhouse, set out early in May and first reported a mackerel school on May 11th. The cruiser kept on the lookout throughout the whole season and accurate reports regarding the size of the schools, their location and apparent direction, were wirelessly to Halifax and telegraphed from there to Yarmouth, Shelburne, Liverpool, Lunenburg, Lockeport and Sherbrooke; and from these points the information was telephoned to all intermediate stations where fishermen were interested.

The service from all angles was a most complete one. Later, two other patrol boats, the "Arleux" and the "Arras," assisted the "Hochelaga," so that the scheme was given a thorough trial.

In addition to the valuable mackerel scouting to the fishermen, the service promises to produce valuable data for biological research work. Captain Barkhouse, of the "Hochelaga," has kept a chart of the movements of the mackerel throughout the whole season, and it is likely that this, with a detailed report, will appear in print and will be made available to all interested.

(Moses H. Nickerson, former M.P.P. in the Nova Scotia legislature was the originator of the mackerel scouting scheme and his suggestions were published in the *Canadian Fisherman* early in the year. The Department are to be commended for putting the idea into effect so promptly.)

A report from Maligant Cove, N. S. states that berried lobsters are very plentiful this season. Lobsters are of good size, averaging about 10 inches.



Fishery Development in France

By DORIS HEMMING.



Paris, August 2nd.—In spite of many financial burdens as a result of the war, the French Government has just voted 200,000,000 frs. (\$40,000,000) for the immediate development of their fisheries. Their ambitious scheme as outlined in the French press makes interesting reading for the members of the Canadian fishing industry, who are counted with the Americans and the English as the rivals of the French in this important trade.

The French people look upon fish as one of the essentials of life and scarce a day passes but fish is served in some form on the average table. Their fishing industry is considered one of the most valuable attributes of the nation and vast sums have been lavished from time to time in the development of the fishing ports and the building of sanitary markets. Although the fact is not generally realized, Boulogne is one of the largest fishing ports in the world, and comes fourth in the list of French harbors, ranking next to Marseilles, Le Havre and Bordeaux.

Next in importance in the fishing world comes Lorient, a coastal town situated half way between Brest and Nantes on the West Coast. La Rochelle of Huguenot fame comes next, and a fourth will be created at Port-de-Bouc on the Mediterranean. The Government is naturally concentrating its efforts on these three main centres, but assistance is also being given to the small fishing villages where private owners or companies are willing to share the cost of improvement with the State.

As a general rule the French port is equipped with excellent stone and cement harbors and jetties that have weathered the storms of half a century without showing signs of wear. The Government grant will therefore be chiefly to augment the fishing fleet which suffered heavily during the war. The destruction of French shipping is calculated at 40,000 tons. This tonnage is not to be replaced by old fashioned schooners such as were lost, but by the most modern gasoline and oil-propelled launches that invention has devised. These boats will be purchased by fishing companies or individuals on easy terms, as the Government has

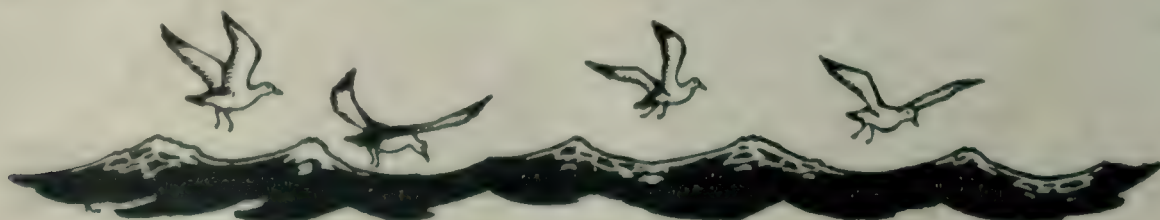
no intention of starting an industry of its own on paternal lines.

The program of harbor improvements is already completed, thanks to credits granted earlier by the Government. This program deals chiefly with markets, and drying plants, of which some 150 are being built and remodeled.

The most interesting section deals with installation of cold storage plants in which the Government is assisted by the railways. France is not a leader in refrigeration by any means, either privately or co-operatively, and her present system leaves much to be desired. Although the weather is as hot in France as anywhere else, no attempt is made to distribute ice to families in the summer months, and the methods of storing fish and meat practised in the trade, we should consider very primitive.

The French are however discovering the boon of artificial ice, as the Government announces that a large refrigeration plant is to be built at Lorient and another on the island of St. Pierre and Miquelon. By means of these cold storage houses the movement of the supply of fish from the producers in the Grand Banks and in the Gulf of St. Lawrence will be regulated independent of the seasons until it reaches the consumer in France. The railways and various independent companies are also building plants at Ivry on the outskirts of Paris, at Douarenez, Lyons, St. Etienne, Dijon and Strasbourg.

The French Government is assisted in its efforts to develop the fisheries by the Chambers of Commerce, and municipal Governments of the four main ports to be benefitted. The grant of two hundred million is looked upon in the light of an investment rather than an expenditure as the Government expects to participate in the increased earnings of these coastal towns. Owing to the destruction of the cattle in the north of France and the difficulty of bringing frozen meat from overseas until the merchant marine has been rebuilt, the French meat supply is not in a very flourishing condition. While taking advantage of this shortage to increase the consumption of fish, the fishing industry will also fill an important role in restoring the normal life of the country.



A BARGAIN IN VESSELS.

The Editor of the CANADIAN FISHERMAN has inspected two small wooden steamers now lying in the port of Montreal which would be suitable for certain branches of the fishing industry and the very low price asked for them should prove an attractive purchase.

The two vessels inspected are part of a fleet of ten similar craft now lying at Atlantic ports. These craft were built for the Naval Service as patrol boats and are of the British drifter type. Since building in 1917 and 1918, they have been considerably altered by the erection of a long house amidships and at present could be used for cannery tenders, pick-up boats, or fish tugs.

They are strongly constructed of wood equal to Lloyds A. 1 Class, and their dimensions are:—Length, B.P. 84 ft.; breadth, 18 ft. 3 inches; depth moulded, 11 ft.; depth aft, 9 ft. The engines are compound, surface condensing with cylinders 12" x 24" x 16" stroke, 200 I.H.P. at 140 rev. per minute, and capable of maintaining a speed of 8½ to 9 knots. Steam is supplied from one Scotch boiler, two furnaces, with a working pressure of 140 lbs. and a coal consumpt of 4½ tons. Dynamos and all pumps are of the best type and all equipment is of the best obtainable.

Accommodations are provided for ten men and the vessel, engines and gear are in splendid condition. As Naval drifters these vessels cost the Government some \$85,000 to build and equip ready for sea. Alterations costing about \$5,000 have already been made. They can be purchased for around one sixth of their cost and are a real bargain for the fishing firm that can use them.

Particulars can be had from Mr. Walter Lambert, N.A., 14 Place Royale, Montreal, who has already disposed of several craft.

MONTREAL FISH FACTS AND FANCIES.

Montreal dealers report business rather dull as expected at this season of the year.

Why oh why do not our Atlantic producers realize that "Haddock," our important little Fish, must arrive in Montreal in a presentable condition for the dealer to retail it satisfactorily?

The fish have all appearances of being handled "a la pitchfork" carelessly packed, and when reaching destination look very much like Flounders.

Perhaps the poor transportation has something to do with it, but the producer can do something to alleviate things. Why bulk 300 lbs. of haddock of only fair quality in a box. 200 lb. boxes would improve it.

Somebody has to suffer as a result of this and credit notes have to be given, and it all can be easily remedied.

Just recently a very enjoyable banquet was given by the Grand Trunk A. A. Club at which their Association Football Club was the honored guests. Harry Gilbert was the caterer, and fish and chips was the sumptuous fare. Can you wonder why the Trunks cleaned up all the local championships and cups, also the Dominion Trophy—The Connaught Cup. Soccer is a brainy game. The secret of their success is out—

FISH AND CHIPS.

AMERICAN FISHING COMPANY ESTABLISHES CANADIAN BASE.

Labor troubles along the New England Coast, which, according to best authority prove a serious handicap to producers, may react very favorably to the Canadian Fishing Industry. The East Coast Fisheries of Rockland, Maine, a company capitalized at \$50,000,000 and one of the biggest organizations of its kind on the United States Atlantic Coast, has indicated its intention of moving at least a portion of its plant to St. Peters, Cape Breton. Recently the Company had twenty trawlers operating from Rockland, Maine, and the number was being steadily increased.

The Company has purchased a plant at St. Peters and is operating quite largely from that point. It seems disposed to spend a large sum of money in Cape Breton and may eventually make its Headquarters of operation there.

It is learned that representatives of fish importing firms throughout the New England States are inducing Maritime Provinces' fishermen to dispose of their stocks in the New York market. All kinds of fish are included. Even eels which appear so loathsome to people in the Maritime Provinces, are looked for.

RE-CONDITIONING.

Re-conditioning of canned fish in British Columbia has been done in the past by Chinese contractors, but today is being done by a couple of returned men who, in looking round for a suitable occupation upon their re-instatement into civil life discovered this field of endeavor, which had apparently been overlooked by the white man. In Seattle there are two or three firms that look after canned fish for the packers upon their arrival from the canneries, but it remained for Messrs. McBride & Wells to open up an office and secure the equipment for re-conditioning of canned fish in British Columbia. These two men are live wires, and besides the re-conditioning of canned fish, handle any other commodity that may require attention in transit. Another line they are operating is the marking of lumber, which is growing rapidly.

To those who are not familiar with the word re-conditioning, it may be well to state that this applies to the labelling of the canned salmon herring or other variety of fish which is shipped into Vancouver from the canneries, and the purchaser or broker wishes his own labels placed on the cans, the cases are opened up, labels put on or new labels to replace any that may already be on the cans. The cases are then carefully nailed up, and in cases of foreign shipments are wired, which insures the cases not breaking open in transit. Where there are faulty cans or broken cases these are looked after, and a general supervision of the condition of the cases is made. All this work is done under the direct supervision of the firm, which insures careful work, and endeavor will be made to employ none but white help, as rapidly as it is possible to train the help.

The finnan haddie is one of the most delectable cured fish prepared in Canada and is growing constantly in popularity. A chef of world-wide repute is the author of this recipe:—

Cut finnan haddie in disc form. Boil ten minutes with chipped green peppers. Add boiled potatoes cut in disc form. Mix all with cream. Salt and pepper to taste. Serve in hot deep dish or chafing dish.



Experiments in Salting of Fish

By DONALD K. TRESSLER.

(U.S. Bureau of Fisheries Bulletin, 884.)

General Conclusions.

I. *Influence of impurities in salt in salting fish.*—Calcium and magnesium salts and sulphates, as impurities in salt, retard the penetration of salt into fish. Salts containing these impurities, therefore, cause fish to spoil during salting at a lower temperature than salts not containing such impurities. Of these three impurities, calcium is the only one present in commercial salts in large enough quantities to have an appreciable effect on the quality of the salt.

II. *A comparison of the efficiency of brine and dry salt for salting fish.*—Fish packed in dry salt, without any addition of brine, may be kept at a higher temperature than fish salted in brine, for less decomposition takes place if no brine be added. The dry-salt method is the more economical method of the two.

III. *Influence of method of cleaning fish for salting.*—The removal of all blood and viscera, including roe and milt, is absolutely essential for the salting of fish at high temperatures. Blood spoils at a temperature at least 25 deg. F. lower than the spoilage temperature of the flesh of fish.

IV. *Influence of freshness in salting fish.*—During warm weather freshness of fish is essential to successful salting. However, much staler fish may be salted if all blood, roe, and milt are removed in cleaning.

Relative Importance of Factors.

The predominant factor in controlling the qualities of the salt-fish product and the maximum temperature of salting is the thorough cleaning of the fish, so as to effect the removal of all viscera and blood. If fish are perfectly cleaned, it appears possible to obtain a white, sweet-tasting salt fish at any American summer temperature. If the fish are not perfectly cleaned, it is impossible to salt them at any temperature averaging above 70 deg. F. by any known method of salting, regardless of the kind of salt used or the mode of application of the salt.

The factor of second importance is freshness. When the temperature of the fish is above 70 deg. F., the fish must be salted the same day that they are caught, if they are to be successfully cured. At lower temperatures this factor is of less importance, until at 32 deg. F. this factor is practically eliminated. That is to say, at this temperature fish may be kept for long periods and yet be salted successfully.

Next in line of importance comes the method of application of salt. Fish iced for two days may be salted at about 4 deg. higher temperature by the application of dry salt rather than brine. Fine salt must be used for small fish.

Of next importance is the composition of the salt. This factor may be easily controlled by the purchase of salt of known purity. This affects the physical qualities of the salt fish. Commercial salts high in calcium lower the maximum temperature at which fish may be salted by any known method.

Practical Applications of Results.

The probability that fresh fish may be salted without danger of spoilage in any climate in the United States is of considerable importance. The only requirements for salting fish at high summer temperatures are:

1. All viscera and blood must be removed in cleaning.
2. All large fish must be split.
3. The fish must be salted in a reasonably fresh condition.
4. No brine should be added in salting.
5. Salts low in calcium must be chosen.

These requirements do not involve great changes in the methods of salting now employed. In reality they merely require more perfect cleaning and greater care in the selection of salt. The fish of our southern waters that are as yet not utilized may be salted without any difficult changes in the present methods, and thus a great saving may be effected.

CUBAN COD-FISH TRADE.

List of Canadian Exporters Wanted.

Mr. H. A. Chisholm, Canadian Trade Commissioner, Teniente Rey II, Rooms 501 and 502, Havana, Cuba, writes the *Canadian Fisherman* as follows:

"As you probably know, dried codfish looms very large in Canadian exports to Cuba, and since I have come to Havana several commission merchants have asked me if I could arrange for them representations of codfish exporters.

"For the information of this office, then, I would be very grateful if, by using your valuable medium, you could supply me with a list of Canadian exporters of dried cod and other cured and canned fish who wish to develop trade in Cuba but who have not already direct representation in this country."

REPORTS FROM BANKERS.

Reports from some of the Grand Bank fleet are very encouraging. One of the vessels is reported with over 2,000 quintals.—Lunenburg Progress-Enterprise.

FISHERIES ASSOCIATION PROTESTS FREIGHT INCREASES.

The Canadian Fisheries Association were unable to get the members together to enter personal protests against the proposed increase in railway freight rates, but at a meeting of the Transportation Committee the following wire was drafted and sent to the Board of Railway Commissioners, Ottawa:

A. D. Cartwright,
Secretary, Board Railway Commissioners,
Ottawa, Ont.

The Canadian Fisheries Association at a meeting held today are strongly of the opinion that applying a general increase in freight rates on fish is penalizing an industry which has for years been struggling against poor transportation facilities and transportation rates which are as high as this cheap food product can stand. The home market for fish at present is in a precarious condition through lack of active demand. Increased rates will seriously affect the business so laboriously built up, and will retard the development of a natural resource sadly in need of encouragement and one which is capable of enormous expansion and revenue to Canada and to the transportation companies if encouraged by keep fish as a cheap food for the masses. The cost of production to fishermen and others engaged in producing fish is at least two hundred and fifty per cent over pre-war costs. The present day retail prices are, with a few exceptions, practically the same as in 1914. We believe that if increases must be granted to railways, then fish products which were formerly carried on a commodity basis and now carried on a class basis, same should be returned to a commodity basis. The Association is unable to appear before the Board, but our protest against a general increase in rates as far as we are concerned is contained in the foregoing, and we feel that the Commissioners will consider our case in its broadest aspects as a national asset worthy of sympathetic encouragement, and that we will receive justice as in the past.

Canadian Fisheries Association,

F. W. WALLACE, Secretary.

Counsel has been engaged to oppose the increase in Express Rates on fish traffic.

DO YOU KNOW.

THAT approximately one hundred thousand people are employed in the fishing industry in Canada.

THAT the revenue derived from the fisheries of this country in 1919 exceeded sixty millions of dollars?

THAT in no other country in the world with the exception of the United States is artificial propagation of fish conducted on such an extensive scale as in Canada and no where is there a better system employed?

THAT the Dominion of Canada is between two of the greatest fishing areas in the world—the banks of the Atlantic and those of the Pacific?

THAT Canada has 12,500 miles of indented coastline on the Atlantic and Pacific prolific with edible fish, and also 200,000 square miles of interior waters from which to draw fish supplies?

THAT Canada has the opportunity of placing herself in the very forefront as a fish-producing country?

THAT we have not awakened to the wealth of our fisheries?

DEGREES IN FISHING.

New Departure at Liverpool University.

The University of Liverpool has arranged curricula, and is prepared to grant the degrees of Bachelor of Science in Oceanography and Fisheries and of Bachelor of Commercial Science, with special reference to a business or administrative career in connection with the fishing industries. The departure is new and interesting, says the "Times." A year ago Professor W. A. Herdman, president-elect of the British Association, endowed a Chair of Oceanography, the first on the subject in the British Isles, and agreed to occupy it himself until October, 1920. The Professor, who held the Chair of Zoology at Liverpool for nearly forty years, determined from the first that his teaching should have a special relation to the sea fisheries of Lancashire and the ocean trade of Liverpool. This linking of academic science with local industries has been too little followed in Great Britain. In France it was the star followed by Pasteur, and directed that great man towards some of his most brilliant achievements. Dr. Herdman created a Fisheries Laboratory in his University, created and brought into co-operation with it a biological station at Port Erin, and arranged periodical ocean trips for dredging and collecting. When the Isle of Man Fishery Board and the Lancashire and Western Sea Fisheries Committee were established, the University of Liverpool became their natural source of inspiration. It was fitting that the Professor of Oceanography should have spent the first and only year during which he held the new Chair in solidifying that union of science and industry on which he had been so long engaged. The curricula, which will occupy three years, provide a sound educational training adapted to specialised careers, and should give the students an insight into science and research. A somewhat extreme specialisation in university courses accords with the habits, if not with the needs, of the day. But we regret that it must be codified in new degrees. We should have preferred the adaption of the new curricula to the ordinary degree of B.Sc., with the addition, if necessary, of "honours in fisheries and oceanography," and to the ordinary degree of B.A., again with the addition of "honours in commerce."—Fishing News.

VERY FISHY.

Perhaps the most typical fish story comes from Norway, Henrik Dahl, of Alesund, was a follower of Darwin. Wishing to prove the theory of adaptability of a species to its environment, he caught a herring in the fjord and kept it in a tub at home. The water he reduced day by day until the herring was able to do without any at all.

The next move was to train it to live on dry ground. It flopped about very awkwardly at first, but gradually learned to move freely, and was able at last to follow its master on his walks.

One day Henrik had to cross a bridge, which was old and out of repair. His pet was hopping along, jumping at flies now and again, all heedless of danger. Unfortunately, on the bridge it slipped, missed its footing, fell through a hole into the harbor and was drowned.

CANADIAN FISH IN JAPAN.

By A. E. BRYAN, Canadian Trade Commissioner in Japan.

Fish Imports in 1918.

Salted Herring and Salmon.

	Yen.
Canada	25,008
U.S.	74,373
Total	99,399

I presume that it is not necessary to go into this very fully, as B.C. exporters know well the requirements of this fish trade, most of the shipments being made from this coast. It can be said, however, that this business fell off almost entirely during the war when prices rose so high that it no longer could be sold in Japan. In 1913 we exported to Japan salted fish to the value of 219,902 yen compared to the U.S. figures of 292,534 yen. In 1914 our exports fell to 158,130 yen, and the U.S. figures to 166,857 yen. So that we divided this business pretty evenly with our American neighbours. This fishstuff is considered quite a delicacy to Japanese palates. Salted salmon is particularly so at New Year's time, and can often be seen at this time of year done up in a big white envelope with coloured strings or "Noshi" to be given usually as a New Year's present to some close friend.

There is always a market for fishstuff in Japan providing the prices are right.

Canned Fish.

The market for canned fish in Japan is very small. In the first place the Japanese have now many canneries of their own, both in Hokkaido, Manchuria, and in Kamchatka. The American Can Co., have a factory in Hakodate to supply the tins for this industry. During 1919 the output of tinned salmon in Kamchatka amounted to 740,000 cases, which was much larger than usual. This salmon is exported all over the world—but by far the greatest portion goes to London—where in August, 1918, it was selling at 105 shillings a case delivered.

However, the quality of the Japanese salmon is not to be compared with B.C. red salmon, so that there is a small demand for our salmon in the high class trade, which also buys other Canadian tinned fish of all kinds.

This is chiefly supplied by the wholesale grocery houses. Some business has also been done with Canadian fishstuff in Siberia and China, the fish being bought through Japanese commission houses for re-exportation.

She—"What makes you so silly?"

He—"I slept under a crazy quilt last night."

Smithson—"Do you know that Noah was the greatest financier that ever lived?"

Simpson—"No; how do you make that out?"

Smithson—"Well, he was able to float a company when the whole world was in liquidation."

FISHERY DEVELOPMENTS ON LAKE ATHABASCA.

Nova Scotia Fish Men to Develop Fish Canning in Northern Lake.

Extensive operations involving the outlay of nearly one half million dollars, and the maintenance of a big fishing fleet are planned by the Mackenzie Basin Fisheries, who are establishing a cannery at Black Bay, Athabasca, equipped with modern machinery that will employ over one hundred helpers, according to Captain Les Baxter, of Canning, Nova Scotia. Already four boats of ten-ton capacity are now assembled at Peace River ready for the voyage down the Peace to Lake Athabasca. In addition thirty Nova Scotia built dories are completed ready to be used in the fishing operations that will be carried out by the company, and a 30-ton capacity boat together with three 70-foot scows are under construction and almost completed.

It is proposed to erect a canning plant that will have a capacity to handle the product of lake trout which the company hope to place on the markets embracing all the prairie provinces.

Capt. Les Baxter will join his partner, Joseph H. Thorpe, of Thorpe Brothers, and Baxter, who is at present at Peace River, completing the remaining boats that will go to make up the Athabasca fishing fleet. Captain L. Baxter with his partner are undertaking the contract for the erection of the Mackenzie Basin Fisheries factory. The company have their headquarters in Calgary with R. W. Jones as managing director. In addition the personnel of the company comprise men who have had a wide experience in the Nova Scotia fishing industry.

MARKET FOR CANNED SALMON IN GREECE.

The war has indirectly been responsible for the consumption of canned salmon in Greece. Previous to the war it was practically unknown, but during the war it was made an army ration. As a result the Greeks became familiar with this commodity and due to the scarcity of meat at that time this article became very much in demand. Today all grocers carry it, and all classes of people appear to purchase canned salmon.

Under class 12 of the Greek tariff, the import duty on canned fish is 72.50 per 100 okes, or about \$13.99 per 282.15 pounds. All foods before clearing customs in Greece are examined by a Government board, but there are no published standards of purity, weight, packing, etc.

Consumption has not so far been affected by high prices. However, it is said that the market is overstocked at present.

She seemed as plump as any peach

On dress parade last Sunday,

But when I met her on the beach

She looked like meatless Monday.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

THE SALMON MARKET IN BRITISH COLUMBIA.

In this issue of the CANADIAN FISHERMAN will be found the season's prices as set by the British Columbia Packers Association. These are the prices which every handler of canned salmon really waits for before getting down to hard work in the disposing of the season's pack. In some instances a packer will dispose of his entire pack to one buyer, and in such instances they will not wait for the season's prices to be made, but as a general thing there is a tendency to hold off on the final drive to clean up until these prices are issued.

There has been no change in conditions during the past month, but there is a tendency on the part of all the packers to find a Canadian market for pinks and chums or possibly pinks alone. Without doubt the Canadian Public would buy pinks and chums if these varieties were advertised properly, and the attention of the buying public were called to this economical food. In Vancouver the writer has noticed certain special sales of the lower priced canned salmon, and in practically every instance the lots were disposed of without any trouble.

SEASON'S PRICES ON CANNED SALMON.

Set by The British Columbia Packers' Association.

Vancouver, B.C., Aug. 12, 1920.

Sockeye—Talls	\$19.00
" Flats	19.50
" ½ Flats	20.50
Red Spring—Talls	16.50
" " ½ Flats	18.00
Cohoe—Talls	12.00
" Flats	12.25
" ½ Flats	13.50
Pink—Talls	6.50
" ½ Flats	7.50
Chum—Talls	5.25
" ½ Flats	6.25

"EULACHON" OR "OOLICHAN".

An enquirer asks the Secretary of the C. F. A. if the United States Bureau of Fisheries will continue to spell "oolichan" as "eulachon". When the Canadian Fisheries Association undertook to standardize North American trade names for fish, the U. S. Bureau of Fisheries agreed to adopt the Canadian spelling. "Oolichan" is therefore the correct and accepted appellation from now on in both countries.

THE ASSISTANT DEPUTY OF FISHERIES HAS BEEN A VERY BUSY MAN WHILE ON HIS TRIP WEST.

After covering the entire Northern part of British Columbia, and making a personal investigation into every salmon district in that section, Mr. W. A. Found, Assistant Deputy Minister of Fisheries, arrived in Vancouver on August 10th. This trip covered a period of three weeks, and during that time inspection of all waters as far North as the Laska were made, and even the trap fishing on the American side was looked into. The trip up covered the inside waters, and on the way down, the Queen Charlotte Islands and the West Coast of Vancouver Island were covered.

With Mr. Found on this trip was Col. Cunningham, Chief Fisheries Inspector for British Columbia. These two officials decided on certain changes regarding tidal boundaries in the Nass and Skeena River districts with the idea of conserving the salmon in those two rivers.

From Mr. Found's observations, it is his opinion the 1920 regulations are working fine, and this applies to the entire coast.

Before leaving for the East Mr. Found will make a careful inspection of the Fraser River district.

HON. C. C. BALLANTYNE TO VISIT PACIFIC COAST.

The Hon. C. C. Ballantyne has left for a visit to the Pacific Coast where he will look into matters pertaining to fisheries and marine. The Minister will travel out via Grand Trunk Pacific to Prince Rupert, thence to Victoria, and expects to be in Vancouver about August 26th. The Prince Rupert and Vancouver Branches of the Canadian Fisheries Association, it is believed, will wait on the Minister and tender him a reception of some kind—possibly a luncheon or dinner.

NEW SOUTH WALES REGULATIONS REGARDING MARKING OF NET WEIGHT OF CANNED FISH ON LABELS.

Although the Canadian Regulations require the marking of the net weight of contents on all canned fish labels, it may be well to quote from a letter recently received from Mr. D. H. Ross, Canadian Trade Commissioner to Australia, which was addressed to F. E. Payson, Secretary of the Vancouver Branch of the C. F. A.

"When I was in Vancouver I advised you concerning proposed legislation by the State Government of New South Wales to enforce the marking of the net weight on each can of fish sold in that state.

I have been for some time in communication with the New South Wales Authorities in an endeavor to have the regulation postponed in so far as the 1920 pack of British Columbia salmon and other fish was concerned. Only a few days ago was the final decision received and it was promptly cabled to the Department of Trade and Commerce, Ottawa, who likely advised British Columbia packers accordingly.

I have sent by today's mail, a paragraph for insertion in the "Weekly Bulletin" of our Department to the effect that the decision of the New South Wales authorities is that, on and after July 1st, 1920, canned fish — With the exception of Sardines — will not be permitted to be sold in New South Wales unless the net weight of the contents of each can is distinctly marked on the label.

You might advise your friends comprising the Canadian Fisheries Association at Vancouver, and other points in B. C. in respect to the decision.

I am under the impression that it is only N. S. W. that has such a regulation in view. Under the Commonwealth law, it is not necessary to mark the net weight on cans, but if the weight is so marked, it must state same accurately, and whether it is the gross or the net weight."

CANNERY OFFICIALS MAKING TOURS OF THEIR PLANTS.

Officials of the different cannery firms were nearly all out of town during the first part of August, making tours of inspection of their different canneries, and getting a line on this season's pack. In some instances this means a trip taking two or three weeks, as many of the canneries have only a weekly boat service.

THE CONVENTION NUMBER.

Many compliments are being received by the Pacific Coast Representative on the appearance of the convention number of the "Canadian Fisherman". The complete list of papers, published in full, are most valuable, and many requests have been received for extra copies.

HALIBUTER "GIFFEN" BURNED.

The gasolined halibut schooner "Giffen" hailing from Prince Rupert was burned while off Cumshewa, Graham Island, Friday night, July 23rd.

The fire started in the Galley, and was followed by several explosions as gasoline tanks blew up. The fire gained headway rapidly, and the Master and two men had only time to take to a dory and get away saving only what they stood in. They rowed for 24 hours to Sandspit, where assistance was given them. The fishing boat "Kuban" picked them up, and brought them to Prince Rupert.

HALIBUT STILL ARRIVING IN VANCOUVER IN GOOD QUANTITIES.

The independent halibut schooners are still arriving in Vancouver and as a result the market is kept well supplied, although the steamers of the Canadian Fishing Co., Ltd., are still tied up with the exception of the "Celestial Empire."

A DIRECT RESULT OF THE RECENT FISHERIES CONVENTION.

The Secretary of the Vancouver branch of the C. F. A. has received several important communications affecting the fishing industry from individuals and associations as a direct result of the annual convention held in Vancouver during June. This speaks well for association work, and that association work can accomplish much for its members when matters affecting the industry are brought to the attention of the different associations working in districts in other localities, is well exemplified by these happenings. It is team work that counts, and this is becoming recognized in business relations more and more as the associations representing the different industries demonstrate their usefulness. The fishing industry is fast demonstrating what can be accomplished by association work. Those who are not members of the Canadian Fisheries Association should become members, and those who are members should show your interest by attending meetings, and when problems arise that you wish help in solving, try out the association for assistance.

CURRY-McWILLIAM CANNERY DESTROYED BY FIRE.

On July 24th, the Curry-McWilliams salmon cannery, situated on Westham Island, at the foot of Woodward's Slough, Fraser River, was completely destroyed by fire, which broke out in the quarters of the Chinese Cannery workers. This cannery was the property of the British Columbia Packers Association.

The fire destroyed the Cannery building, machinery, nets, (estimated at \$14,000), and about 6,000 cases of sockeye salmon, the cannery store, manager's residence, and thirty or forty houses occupied by Japanese and Chinese cannery workers. The contents of the store, and the furniture from the Manager's residence was saved, and the cannery workers saved most of their personal belongings.

The fire was fought with the cannery pump, and assisted by outside help it looked at one time as though the plant might be saved, but the flames reached the roof of the main building, and shortly after the pump was put out of action, when nothing further could be done to save the buildings.

The loss is estimated at \$100,000 fully covered by insurance.

There has been no decision reached regarding the re-building of the cannery at this writing.

HON. HUGH ARMSTRONG ON THE PACIFIC COAST.

Hon. Hugh Armstrong, of the Armstrong Independent Fisheries, Portage la Prairie, Man., accompanied by Mrs. Armstrong arrived in Vancouver the first part of August, and spent some time on the British Columbia Coast. Hon. Mr. Armstrong is combining business and pleasure, and British Columbia has been furnishing the required variety of weather to facilitate the combination.

CANADIAN FISHING CO., LTD., BUILDING LARGE ADDITION TO PLANT.

Mr. A. L. Hager, Managing Director of the Canadian Fishing Co., Ltd., states that improvements totalling nearly \$200,000.00 will be carried out on its plant at the foot of Gore Ave., Vancouver, B. C.

The developments will include a new warehouse for canned fish and ice, additions and improvements to the curing plant, cold storage, the cannery and other departments. Some of this work was planned before the war, and owing to that, was delayed. It would now however be rushed to completion.

Work has already commenced on the new Canned fish and ice warehouse to the South of the present building. Old piling is being removed, and new piling being driven, and main piers of concrete being installed. This new building will be 167 feet long by 68 feet wide and two stories in height. It will be of mill construction, and covered with corrugated iron, and cost about \$50,000.00.

Another important improvement will be the installation of sprinkler system. This will be extremely costly, with costs ruling as they do at present, but with such a valuable plant as this complete fire protection is necessary.

When all these improvements are finished, and the new building is completed this already very modern plant, in appearance and operation, will be a show place as evidencing what may be accomplished by proper business methods in developing one of British Columbia's great natural industries.

ALASKA EXPERIENCES HEAVY STORMS. FISH TRAPS DESTROYED.

Ketchikan, Alaska, reports an estimated loss of \$250,000.00 as a result of storms and resultant damage to fish traps in the Ketchikan district. It is expected that the loss in fish will be more than the value in wrecked traps although scores of those were damaged. To the North of Ketchikan heavy losses were also reported. The run of fish had just started in the Ketchikan district.

HIGH PRICES FOR SOCKEYES BEING PAID THE FISHERMAN.

On Puget Sound the price of sockeye salmon has been around the dollar mark for some time past, but it remained for this particular variety to reach that price to the fisherman during the first week in August on the Fraser River. With a very good year, in comparison with some of the previous recent years, this price means good earnings for the fisherman, as the majority of them own their own gear this season, and are therefore able to sell to the highest bidder. This also means that the ultimate consumer will pay the highest price ever for this particular variety of delicious canned food.

FRASER RIVER SHOWS INCREASE OVER LAST YEAR.

In 1913 the Fraser River had a big year, and since then there has been every indication of the depletion of the salmon, particularly the sockeye, in this river. This year fishing has looked much better, and if indications are at all to be relied upon, it may be that 1921 will show good returns, as it has been remarked by observers that a lean year always follows the four year run, and as this is the 3rd year after a

four year run, then 1921 which is the 4th year should show much better returns than this year. In July this year the cash value shows an increase of over \$90,000.00 over 1919.

ALBINO SALMON.

Two specimens of a freak salmon have been received by the Fisheries Branch, Department of Marine and Fisheries from its hatchery operated at Cowichan Lake, Vancouver Island, British Columbia. These fish are albino spring salmon. They were hatched and reared in the ponds of the Cowichan Hatchery and have therefore, never been to sea. The eggs were collected in October 1916, the fry hatched in the following February and some of the males matured in twenty months' time. None of the females have so far yielded eggs but are expected to do so this Fall.

At the Cowichan Hatchery there is retained the largest number of albino fish ever collected together. They are being retained for experimental purposes, viz. to see if they will propagate without going to sea, also to see if the lack of colored pigments will also characterize the offspring.

As far as the Superintendent of Hatchery can tell the eggs from which this collection of albino fish matured came from the one parent fish. In the collection of 1916, he was attracted by a number of light colored eggs in several trays. He picked these out carefully and hatched them by themselves. Every one of these light colored eggs yielded fish pure white. They are now all in a healthy state. The collection has been of international interest to biological students, and several Museums on the West coast have requested and secured specimens.

LOOKING FORWARD TO THE 1921 CONVENTION.

Remember that one year is a short time away. They have been talking 1921 at Montreal here in British Columbia already. How about it, you Easterners? The publicity King believes in getting things started early, and keeping it up. It will be some time before they forget the 1920 convention, and they are wondering if Montreal can show them anything.

INDEPENDENT HALIBUT SCHOONERS STILL DELIVERING THEIR CATCHES AT VANCOUVER.

As the large steamers of the Canadian Fishing Co., Ltd., are still tied up, the independent schooners are still delivering their catches at Vancouver and receiving good prices. Good supplies are arriving, and it looks as they thought this would keep up for some time.

SASKATCHEWAN LAKE RE-STOCKED.

Raspberry Lake about thirty miles from Fort Qu'Appelle, Sask., has been successfully stocked with whitefish by the Fisheries Branch, Department of Marine and Fisheries. In April 1918 eggs which had been taken the previous Fall at Dauphin River entering into Lake Winnipeg were transferred to the Federal Hatchery at Fort Qu'Appelle where they were cared for, during the Winter, and were hatched out in the spring.

The Chief Inspector of Fisheries for the Prairie Provinces visited Raspberry Lake recently and found the fish in a thriving condition. Fish weighing two pounds have been taken this season.

Barren Lakes as Retaining Ponds for Artificially Hatched Salmon



Experienced Hatchery Officer Advocates the System.

Editor, *Canadian Fisherman*—

Dear Sir,—I have just received the very complete Convention Number of the *Canadian Fisherman*, and find that I have been inadvertently misquoted in the part I took in the discussion on Mr. Clanton's paper.

The mere fact that I have been misquoted is not important, but the information I intended to convey is, in my opinion, of such importance as to warrant correction. The part I refer to is that in which I spoke of the "wild waters of Morris Creek" and "bad" lakes. They should have read, "head waters of Morris Creek" and "barren" lakes, and to shed further light on the matter, I would explain that throughout B.C. and probably the other provinces, there are numerous small lakes devoid of fish life of any kind, which can be used as retaining ponds for holding salmon, especially sockeye, until they reach the fingerling stage.

Not only are these lakes ready-made retaining ponds, but, as they are swarming with natural food, feeding is unnecessary, and the adoption of this scheme where such lakes are to be found eliminates on one hand the great expense entailed in feeding large numbers of fry, while affording them the protection it is generally conceded they require.

The barren state of these lakes is attributable to the waterfalls in their outlets, which have prevented fish reaching them, and part of the scheme is to provide means whereby the fingerlings may reach the ocean without being dashed to death over the falls.

Four such lakes have been located at the headwaters of Morris Creek, and while two of them lie at such an altitude as to require considerable engineering to provide for the safe descent of the young fish, the outlets from the other two can be made negotiable at very little expense.

The two latter lakes, Grace and Otter, are about 20 and 10 acres in extent respectively; quite insignificant when viewed as lakes, but not so when considered as retaining ponds.

We planted sockeye in these lakes last April and by the end of June they had attained a length of from 2 in. to 3 in., equal to the average length of yearling Fraser River sockeye under ordinary circumstances, according to certain authorities.

For some reason, perhaps the water was of too high a temperature, or perhaps the limited area at their disposal, the bulk, if not the whole of the fingerlings, left both these lakes before July 1st and made their way down Morris Creek, where they could be seen in considerable numbers.

Specimens of these fingerlings were taken and sent to Mr. Cunningham and Mr. Rodd, and their verdict was that the growth, attained in less than two months from liberation, was "phenomenal," and that the

scheme was to be followed up and extended.

None of the fingerlings was under two inches in length, and no attempt was made to prevent their leaving the lakes, and it is questionable if detaining them is desirable, as the water warms up greatly during the summer, and their early departure gives the live food a chance to recuperate for the following year, besides obviating the necessity of planting fry amongst yearlings.

I am absolutely convinced that by using these two small bodies of water in this way the Morris Creek sockeye runs can be restored not only to their former extent, but to proportions undreamt of.

East of the Harrison Lake hatchery are two more of these barren lakes, Deer and Hicks, the latter of whitefish fame, and 100 and 400 acres in area, respectively. Sockeye were planted in both of these last spring, 288 000 in Hicks Lake alone.

Deer Lake is shallow, and I think the same conditions which caused the fry to leave Grace and Otter lakes apply there also. Hicks Lake, however, is 200 feet deep and the sockeye will likely be able to find the temperature of water they wish, at any rate, they have shown no inclination to leave and I am confident they will stay the full year. A school of about 10,000 of them was seen a short time ago, and 43 were caught at one stroke with a small depaet; some of these fingerlings measured 3½ inches long, and by next spring they will have attained a length of 6 or 8 inches.

Preparations are now being made to construct a flume past the Hicks Creek falls to provide for their safe descent.

Owing to their isolated situation, the planting at these lakes was done with eyed eggs hatched under the stacked tray method. 50,000 eggs, with trays enough to accommodate that number at one layer of eggs to the tray, was a load for a man. Three trays thus loaded, with an empty on top, were tied together and placed in a tributary of the lake, preferably a small spring stream, and when the sac was absorbed, the fry were released and found their way into the lakes. No loss occurred where the water was aerated through exposure to the air above the place where the trays were placed.

Yours truly,
A ROBERTSON.

The Hatchery, Harrison Hot Springs, B.C.

August 1st, 1920.

BRANDED SALMON TAKEN.

Fishermen operating off Lons Island on the Pacific coast recently picked up three branded salmon,—one marked U. S. A., one with a rectangular tag, and one with a diamond shaped tag. These, it is thought likely, were released from spawning grounds, and were marked for scientific purposes.



Fishery Possibilities in West African Waters

By COLIN McKAY.



Years ago the enterprising Sol Jacobs made a voyage to the west coast of Northern Africa with the idea of testing the fishing possibilities there, but he had the misfortune to lose his vessel on an uncharted reef, and since no fishing skipper from this side of the Western Ocean has been venturesome enough to try his luck in the waters of that part of the world. Some time later the French navy undertook a survey of the west coast of Africa from about 35 to 12 degrees north latitude, and later the French began the construction of facilities at Port d'Etienne, near Cape Blanco, with the object of establishing a base for fishing operations. Three co-operative societies of Breton fishermen sent small fleets of fishing vessels of about 40 tons each to work in these fisheries. They were able to catch many kinds of fish in great quantities, but the matter of finding markets for their catches presented serious problems. For a while they did a fair business with Las Palmas in the Canary Islands, but were presently called upon to face an advance in the custom's duty that took the profits off of sales in that market. They also developed a market at Dakar on the African coast, but there, too, they were confronted with tolls and regulations designed in the interests of the native traders.

At various times before the war, the British and the French sent large steam trawlers to these waters on experimental trips. They demonstrated the prevalence of vast quantities of fish of many varieties, but came to the conclusion that large scale enterprise would be necessary to solve the problem of marketing the catches. During the war Grimsby diverted a number of its trawlers to the African fisheries, but their experience under war conditions was not calculated to assure the employment of steam trawlers there after the North Sea was again opened to fishermen.

If these fisheries are to be developed, it will be by sailing craft, equipped with motor engines. The general employment of steam trawlers is likely to be unprofitable, because of the high cost of coal, and the fact that few ports are available for taking coal and supplies. The French fishing craft, which depended entirely on their sails, found they were much handicapped by the prevalence of prolonged calms. They not only lost much time, and frequently had their catches spoilt when they thought to make the fresh market, but were often in danger of being swept on reefs by the strong currents.

Since the 15th century fishermen from the Canary Islands have taken fish in the neighborhood of Cape Blanco, but their operations have only been on a limited scale. Latterly, the Portuguese and Spanish have been giving some attention to these fisheries; government commissions have been studying the question of their exploitation, and it is likely that these two countries will take a leading role in developing the commercial possibilities of these immense fisheries.

To Canada and Newfoundland the probability of the systematic exploitation of the African fisheries in the

near future is a matter of some interest. If Spain and Portugal succeed in developing the technical facilities necessary to the profitable prosecution of these fisheries, the effect upon the dried fish trade may be far-reaching. At present the Oporto market with its ramifications is of great consequence in determining the price of Newfoundland's production of dried fish, and is not without influence upon the price of the Canadian product. Oporto may well become a big factor in the distribution of fish caught in West African waters. This contingency is hardly an immediate prospect, but it is a possibility of the future that suggests a need of not placing too much dependence upon the markets of the Iberian peninsula and the Mediterranean. Probably Canadian and Newfoundland fish would still find a demand in those markets; West Africa fish are oily and usually colored, and when cured by present methods do not present as attractive an appearance as the North Atlantic fish.

Among the fish found in West African waters is a species which resembles the cod, running to a weight of 40 pounds and over, and well adapted for salting and drying. Then there are haddock, whiting, soles larger than the European variety, a species of lobster, anchovy and turbot. In addition, there are numerous sub-tropical and red fish, tunny, bonito, etc. The red fish of many varieties are very fat; they are much appreciated by the natives of the Canaries, and by Europeans who have tried them fresh. They do not, however, dry well; the oil in them turns them yellow and they soon become rancid. When these fish are marketed fresh or frozen it is said they find a ready sale among people who are not averse to oil; they have a high nutritive value.

While it is assumed that the utilization of the fish in these waters for the European market is properly an enterprise for large companies able to establish modern curing plants, and provide special vessels for transport, recent political changes in Morocco and the establishment of the French at Port Etienne, have made it possible to open markets among the native populations which a few years ago could not have been exploited without many difficulties, and even dangers. To work the fisheries for this purpose need not require large capital, but the developments which would be set in motion would help to prepare the way for the larger operations necessary to effect a profitable entrance into European markets, which in any case would probably not be a speedy process, since it would be a question of educating Europeans to eat varieties of fish with which they are not familiar. Developments on a scale likely to seriously affect the markets for Newfoundland and Canadian fish in Europe need not be anticipated in the immediate future, but the possibilities of these immense fisheries should not be lost sight of, and in the meantime it might prove worth while to give more attention to the development of markets in Mexico and Latin America generally.

Newfoundland Standardizes Codfish Cure

We publish herewith text of a proclamation issued by the Minister of Fisheries of Newfoundland on the methods to be adopted in raising the standard of Codfish Cure by Newfoundland fishermen.

CODFISH STANDARDIZATION COMMISSION.

To the Fishermen of Newfoundland:

Proposal Regarding the Methods to be Adopted to Improve the Cure of Newfoundland Codfish.

1. That the position of the Newfoundland Fisheries in relation to those of Norway, Iceland and Britain be placed before the fishermen and the public through the press, and in any other manner that will illustrate the necessity for improving our cure of fish if we are to successfully market out fish in competition with that from other countries.

2. That a full and complete statement of the essential features of curing that must be adopted by all fishermen if the cure is to be improved shall be published and circulated throughout Newfoundland and Labrador.

3. That Inspectors shall be appointed whose duty it shall be to examine and inspect all fishery and curing stages, boats, etc., throughout Newfoundland and the Labrador with a view to:

- (a) Explaining the methods to be adopted to improve the cure;
- (b) Bringing about an improvement in the construction and sanitary condition of Fishing Stages;
- (c) To collect and distribute information as to catch of fish or other matters affecting the interests of the fishermen and the country generally.

NOTE:—The Inspectors should eventually be given authority to condemn stages that are unfit for the sanitary curing of fish.

4. That fish purchased from the fishermen by exporters, whether in St. John's or in outports shall be bought subject to a cull.

5. That all exports of fish from Newfoundland and the Labrador shall be inspected by duly qualified inspectors and certificates issued specifying the nature, style, cure and quality of the fish, and that specific standards shall, if possible, be laid down for the guidance of the Inspectors.

Summarised, the Requirements Most Essential for Improved Cure are:

- (1) Clean boats, stages and splitting tables.
- (2) Well split fish.
- (3) Fish to be well washed from knife—all blood, liver and gut to be removed.
- (4) Clean stage for curing fish.
- (5) Regularity in salting.
- (6) Fish to be washed thoroughly on back and face when taken from salt bulk.
- (7) Fish to be bled as soon as taken from the water when possible.

Labrador.

Same qualities for all markets.

No. 1 Fish.

Fish to be split to the crux of the tail, washed from the knife, free from blood stains, clots, liver and gut.

To be firm, thoroughly salted and well pressed. To be washed out of salt bulk by hand. All slub and slime removed from back. To be dried sufficiently to stand shipment without loss in weight. Fish not complying with these requirements to be classed as No. 2 quality and to be stowed in such a manner in the vessel as to form a distinct part of the cargo.

Shore Fish Cured Labrador Style.

To be known as Imitation Labrador. All Shore Fish cured Labrador style will be graded as such and not as Labrador and must be cured as above. This making of this quality of Imitation Labrador is not encouraged as the demand will be very limited.

The black should be removed from the fins of Shore and Bank fish from 18 inches up. Such fish when well cured will be classed as Extra No. 1 and will command the highest price.

Curing of Fish.

Fish is an article of food, and this fact must be kept clearly before all those who have the handling of it from the time it is caught until it reaches the consumers' table. Unfortunately, this fact is lost sight of by nearly all those who are occupied in the Fisheries of Newfoundland whether they be the catchers, curers or exporters. There is not sufficient care exercised by any one of the several classes of handlers. The fishermen in their anxiety to get their catch under salt forget the fact that the fish they are curing is to be eaten by some person many thousands of miles away possibly many months hence. The exporters in their desire to, first: secure a large stock, and second: to send it to market quickly, also lose sight of the same fact. This must change, and in future all interested in the fisheries must always remember that they are handling an article of food, and treat it accordingly.

The first essential feature of the process for handling food products is **cleanliness**. The boats into which the live fish are thrown from trap or hook must be clean, sweet and free from gurry of past catches. The stage upon which the fish are thrown from the boat must be clean. The splitting tables must be clean and kept clean throughout the whole time that the fish is passing over it. The curing stages must be thoroughly cleansed before the season opens, and kept clean during the whole season. Pound boards should be well washed frequently. Water is plentiful and cheap and should be used without stint. Stages should be limed at least once every year, inside and out.

With thoroughly clean boats, stage heads, splitting tables and stages the first step towards good fish is secured. The next is cleanliness in handling the fish. All blood, livers and gut should be removed; all slime and gurry thoroughly washed off before the fish is put under salt. This can only be done by well washing the fish when split in plenty of clean water.

The fish should be spit to the crux of the tail and laid open evenly without pockets. The sound bone should be removed to about half an inch beyond the end of the sound, to allow the blood in the bone to drain out. If this is done the fish, on going to salt, will have every chance of turning out of salt bulk or pickle a perfect fish.



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For all particulars address

The Secretary,

CANADIAN FISHERIES ASSOCIATION

GARDENVALE, Que.

Salting should be done with care. Much fish is spoiled by irregular salting and by careless packing in bulks. Salting should be completed without delay. Fish should not be laid away to be salted at convenience. Washing out from salt bulk should be done by hand—every fish being washed back and face separately. Eighteen hhds. Cadiz salt should be used in salting Labrador cure. Shore cure should not be bulked higher than three feet and from ten to twelve hhds. Cadiz salt to the hundred quintals.

The length of time for remaining in salt or pickle is a matter for the judgment of the person in charge of the curing, as also in the curing once the fish has been washed out of bulk.

It some cases it is thought advisable that hook and line men should throat their fish immediately they are removed from the hook. This permits the fish to bleed, and not only insure a whiter fish but retards decay of the fish.

The foregoing approved by the Standardization Commission.

W. F. COAKER,
Minister Marine and Fisheries.

B. C. CLAM EXPORT LIMITED.

Extract from Order in Council, dated Monday, the 19th day of July, 1920, P.C. 1611, as amended by Order in Council, dated Saturday the 24th day of July, 1920, P.C. 1692:—

“His Excellence the Administrator in Council, on the recommendation of the Minister of Marine and Fisheries and under the provisions of section 45 of the Fisheries Act, Chapter 8 of the Statutes of 1914, is

pleased to order as follows:—

“The said paragraph (d) of section 5 of the Special Fishery Regulations for the Province of British Columbia is hereby rescinded and the following is hereby substituted in lieu thereof:

“The export from Canada of clams in a raw or fresh state, taken in the Province of British Columbia is prohibited, except when they are shipped in packages each containing not more than eighty pounds of clams in the shell.”



DEPARTMENT OF THE NAVAL SERVICE.

NOTICE.

ARRANGEMENTS have been completed whereby all of the vessels belonging to the Imperial Government commonly known as Trawlers and Drifters, and presently under the jurisdiction of the Department of the Naval Service at Halifax, N.S., will be sent to England with the least possible delay.

Any one desiring to avail themselves of the opportunity afforded by the presence of these vessels in Canada to purchase one or more of them should act promptly. Inquiries addressed to the undersigned will receive prompt consideration.

G. J. DESBARATS,

Deputy Minister of the Naval Service,
Ottawa, Ont., August 12, 1920.

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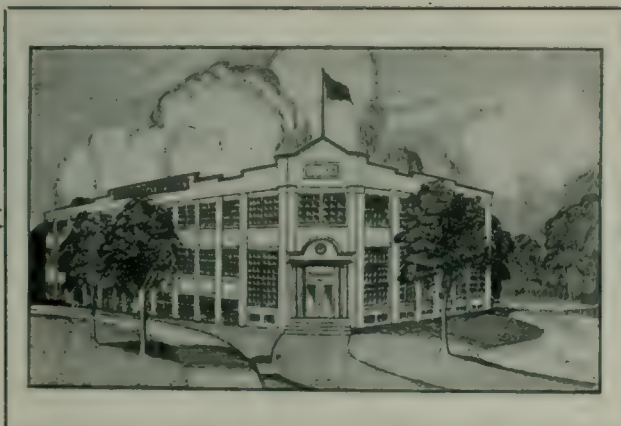
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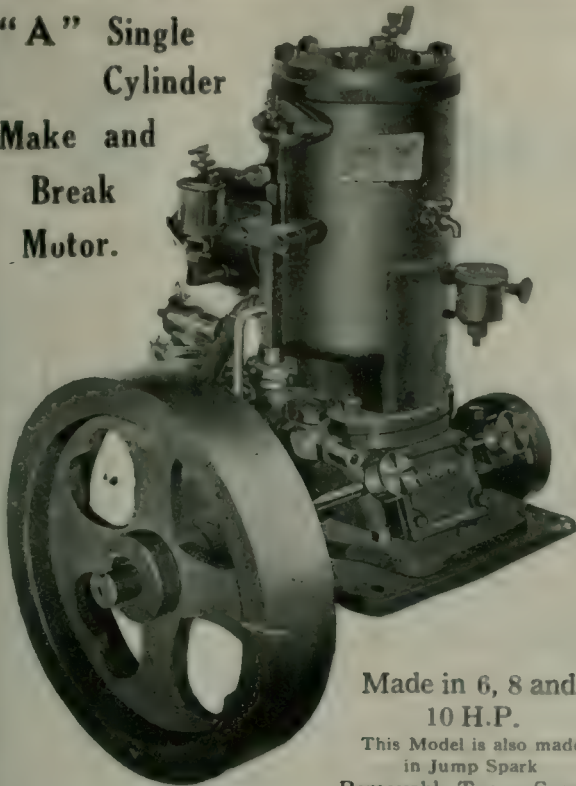
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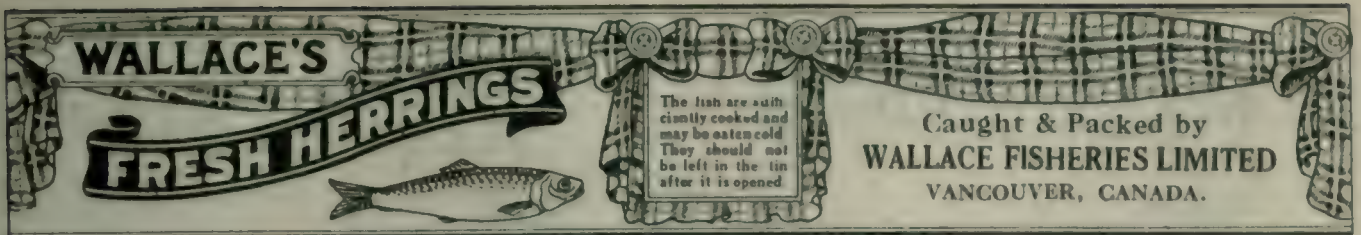
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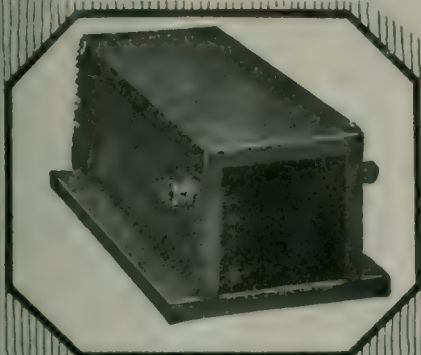
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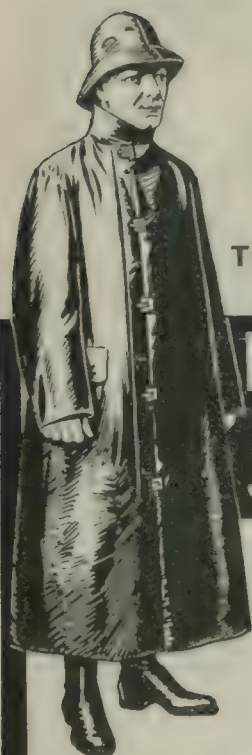
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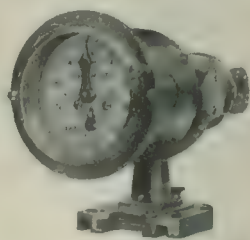
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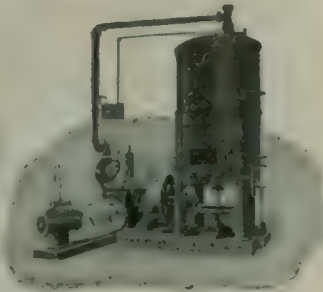
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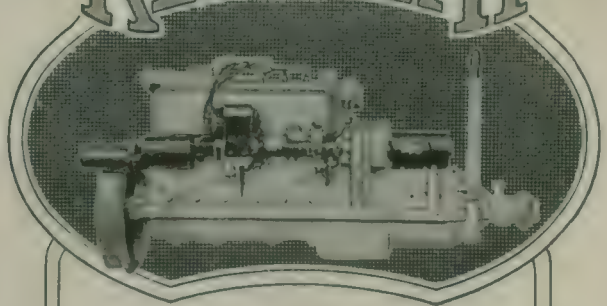
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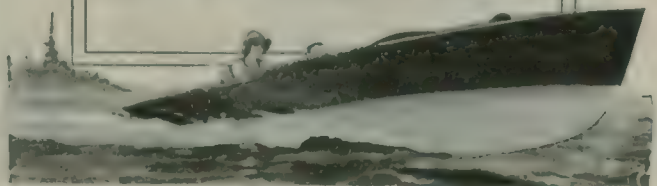
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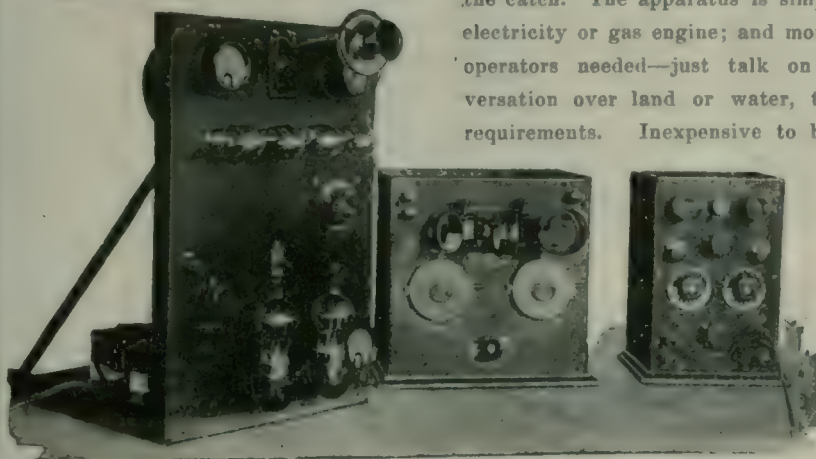
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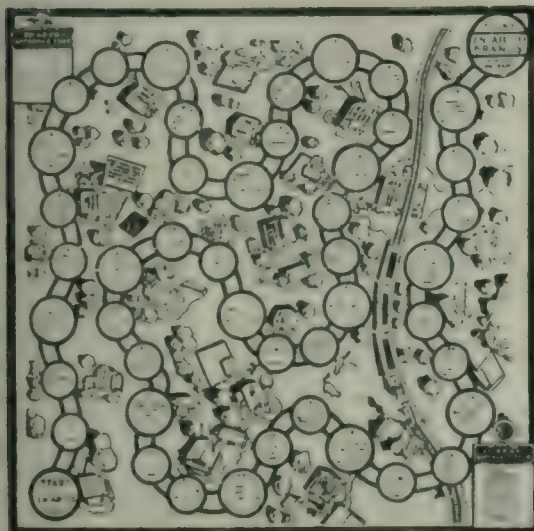
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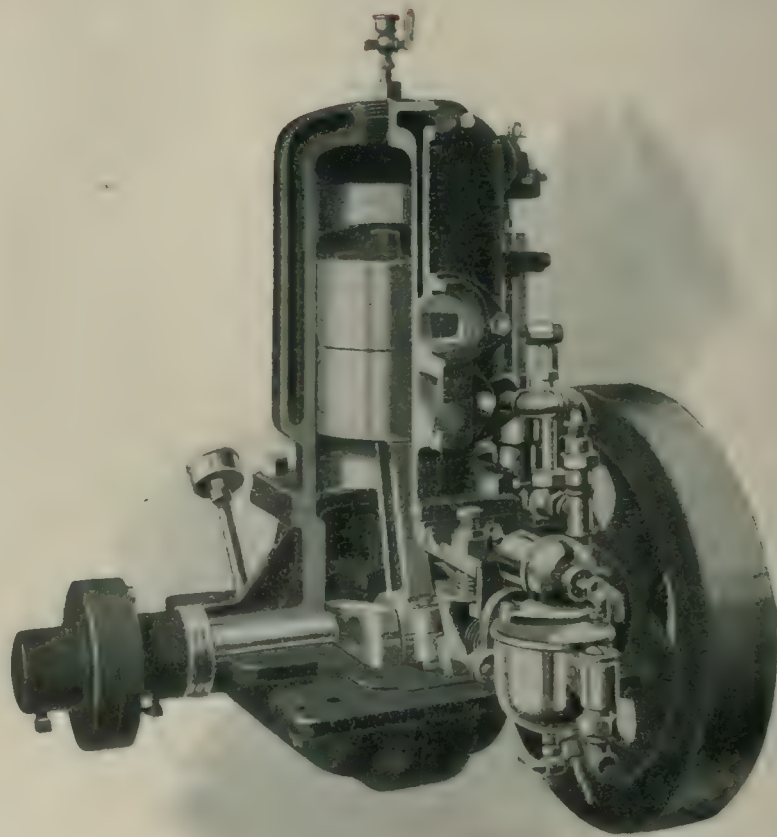
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THE CANADIAN FISHERMAN

Official Organ of the Canadian Fisheries Association

VOL. VII.

GARDENVALE, P.Q., SEPTEMBER, 1920

No. 9

To the Fishing Industry



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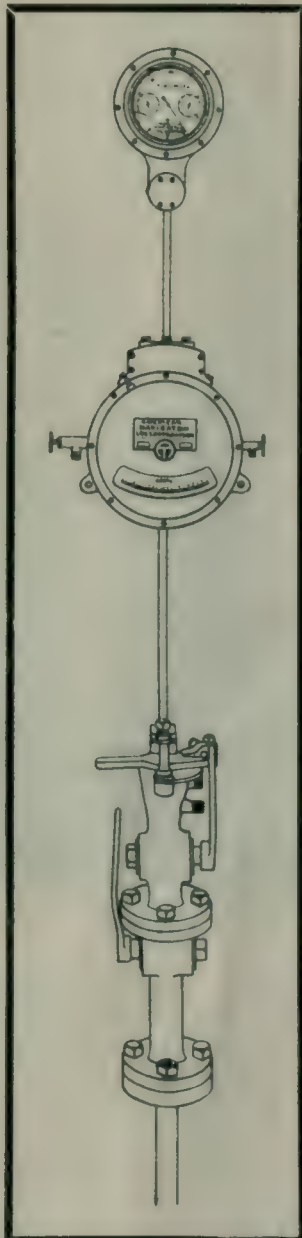
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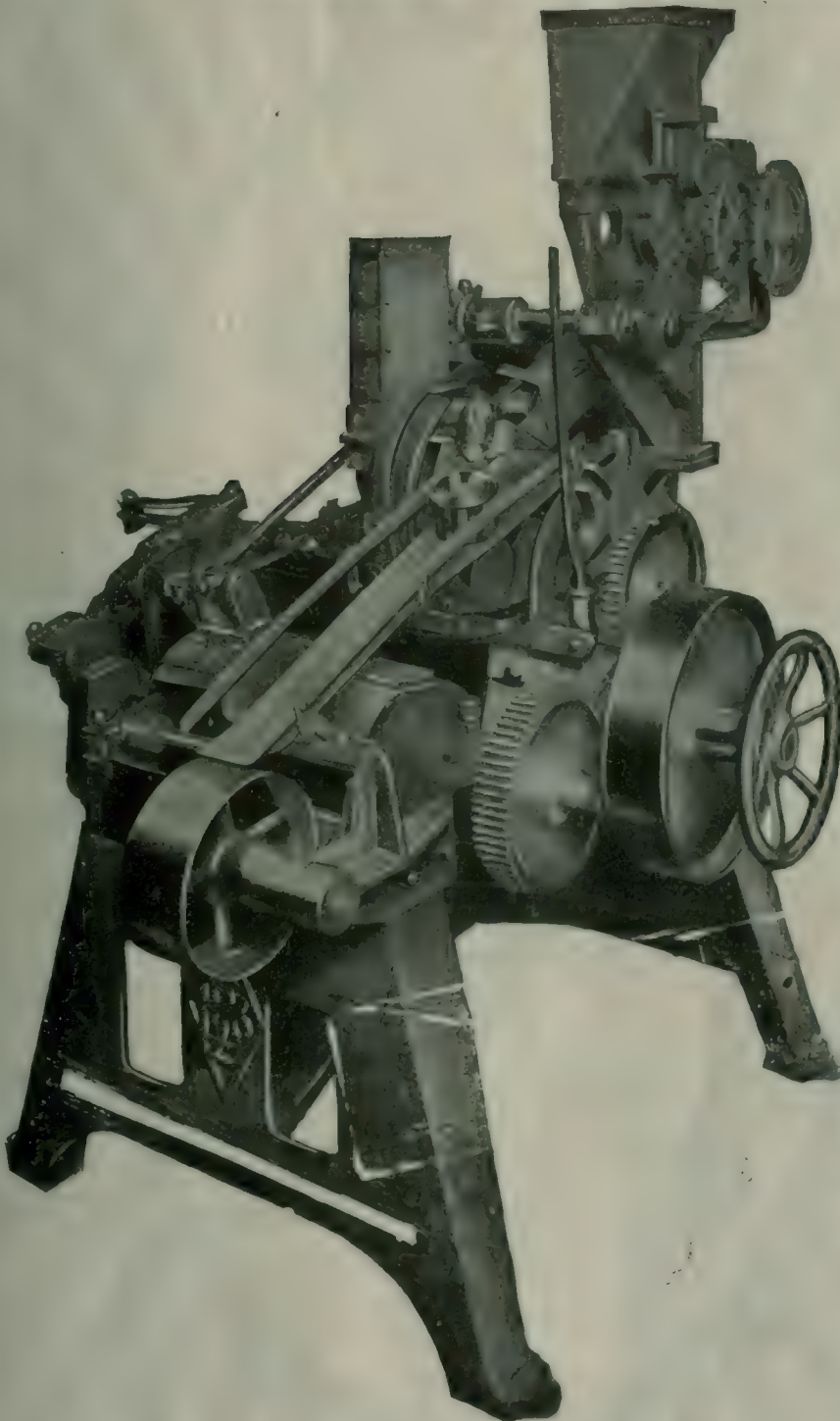
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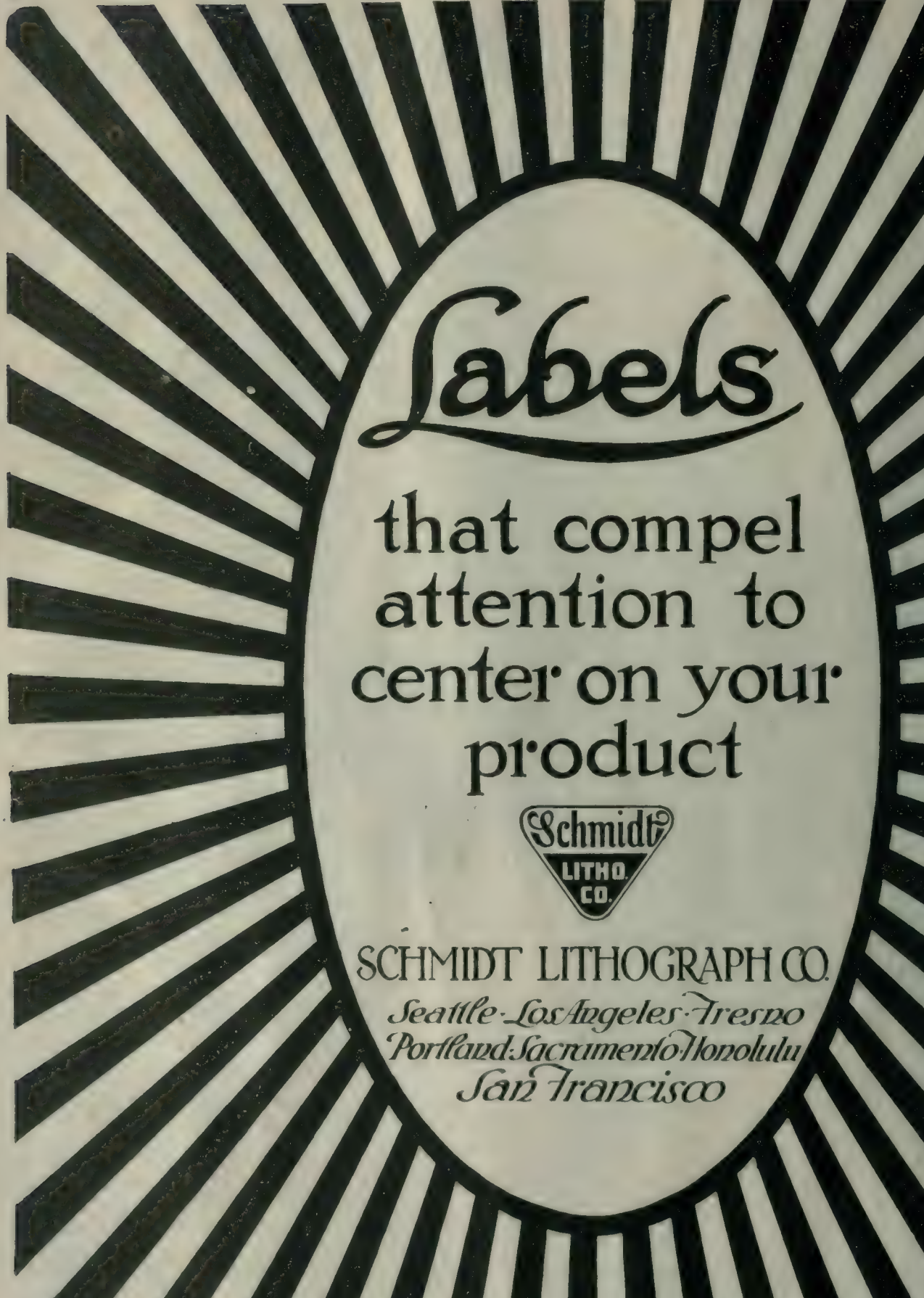
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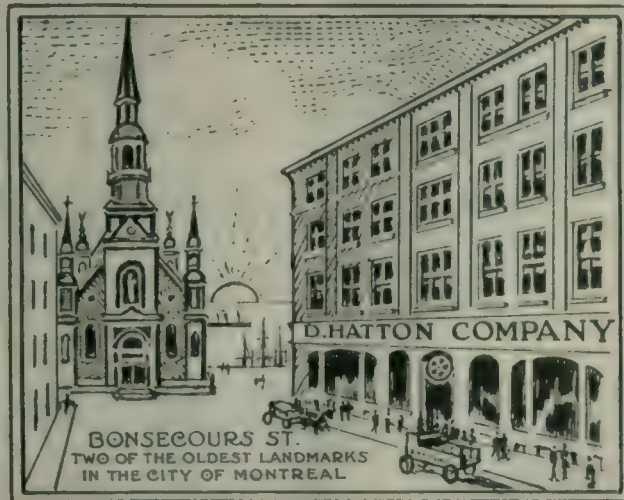
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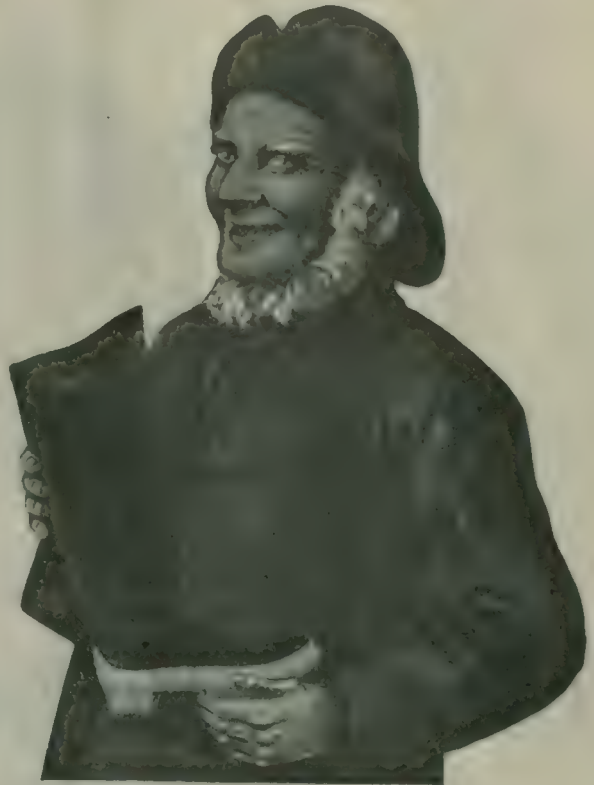
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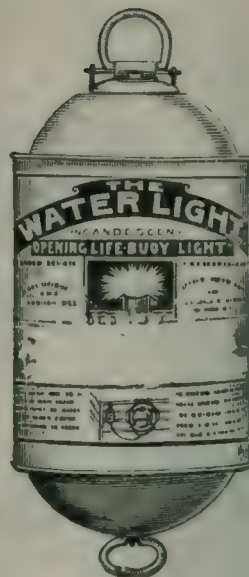
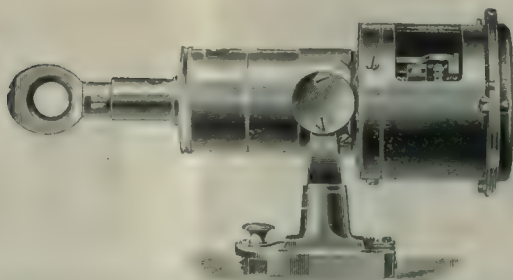
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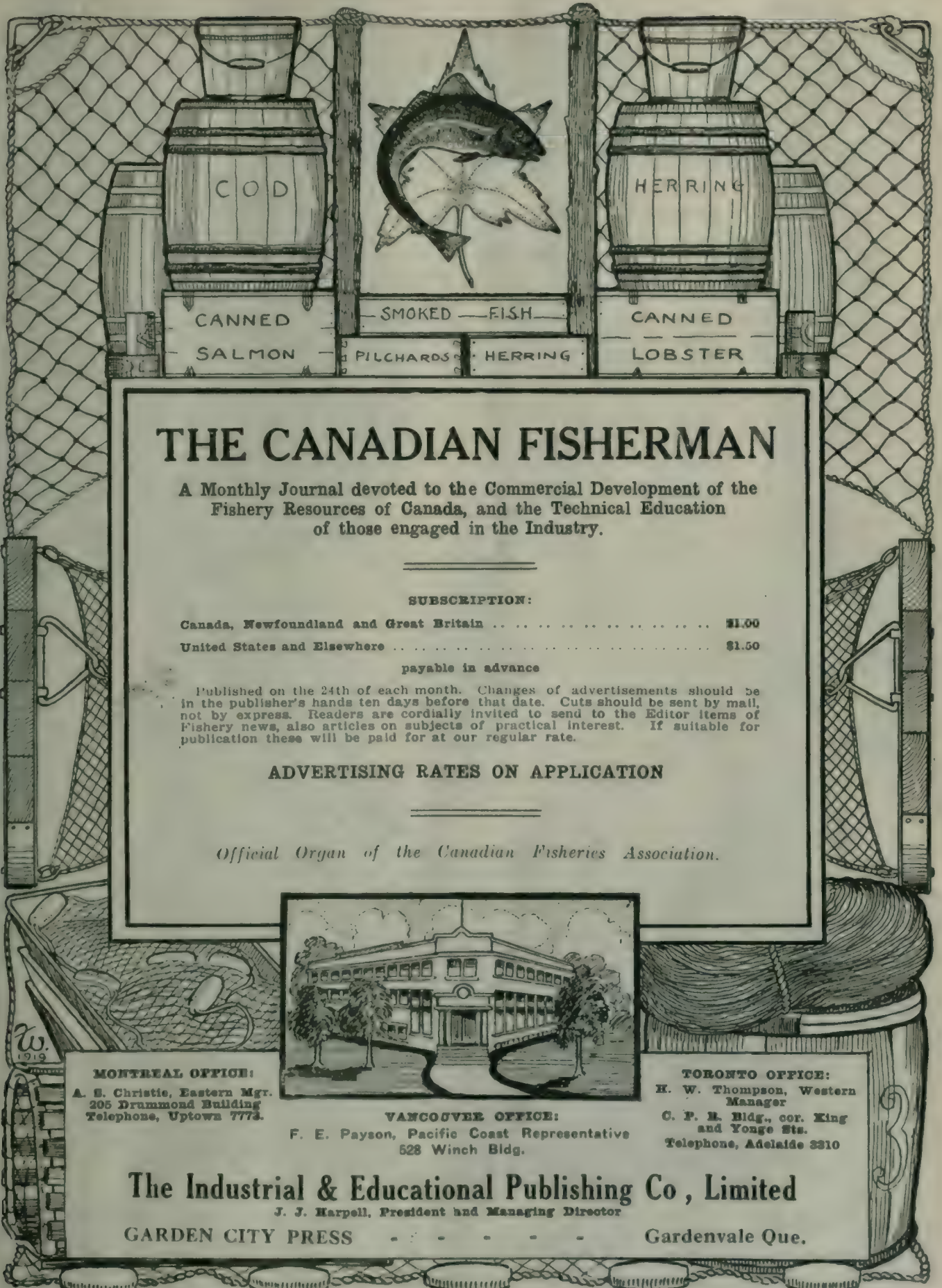
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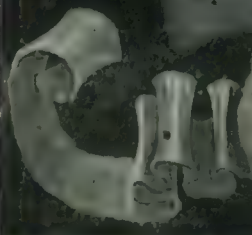
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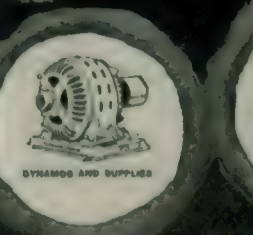
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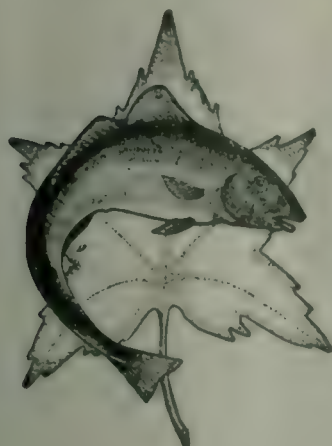


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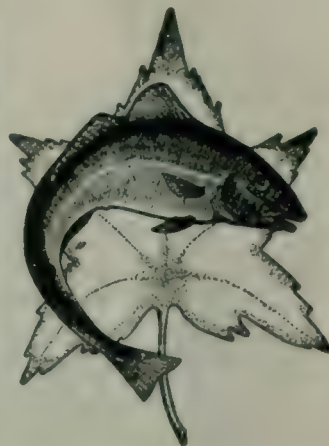


EDITORIAL

SEPTEMBER, 1920



FREDERICK WILLIAM WALLACE
Editor



DUTY FREE FISH INTO CANADA.

The recommendations of the Canadian-American Fisheries Conference of 1918 advocate the removal of the Canadian duty on fresh and fresh-frozen fish "with a view to assuring stability in the industry that the two countries enter into an agreement by which such fish will be admitted customs duty free from either country into the other." Also "Your commissioners are convinced that...the fishing industry as well as the people of both countries as a whole can best be served by permanently removing all barriers to the production and movement of fish in the two countries."

It is understood that the Canadian Government has agreed to the principle of free fish and that same has been incorporated in the Canadian-American Fisheries Treaty—which treaty is awaiting ratification by the U. S. Government. But with the appointment by the Canadian Government of a Tariff Commission now holding sessions throughout the country, this question of free entry of U. S. fish into Canada will certainly come up before them. There is no doubt but what the whole Canadian tariff needs overhauling and the coming Parliamentary session will be largely devoted to tariff arguments and lengthy verbal battles between Free Traders and Protectionists.

In the fishing industry of this country the question of the removal of the duty on American fish is looked upon with disfavor by the producers and favorably by distributors and retailers. Sane and reasonable arguments are put forward by both factions, but the question to be decided is "What policy is the best for the Industry and the Country—Free Trade or Protection in Fish?"

Distributors and retailers feel that with duty free fish they have a much greater source of supply to draw from and that lower prices will rule when American fish competes with Canadian on a duty-free basis. Certain fish, for which there is a growing demand and

which are not produced in Canada, can be secured at lower prices and the market stimulated thereby. On the Atlantic Coast, dealers in Toronto, Montreal and Quebec and Ontario points can receive fish from Boston, Portland, New York and other United States producing points much more rapidly than from producing points in the Maritime Provinces of Canada. Consumption of fish in Canada will be increased by lower prices, greater variety and steadier supply.

Fishermen, vessel owners, and producers of fish in Canada feel that duty-free fish from the United States would be disastrous to the development of the Canadian fishing industry. They claim that, on the Atlantic, they are at a disadvantage in the distance from New England ports to eastern Canadian markets as compared with the distance from Maritime Provinces ports to the same. This fact was realized by the Canadian Government when fish shipments from the Maritime Provinces to Canadian markets were assisted by an express subsidy which equalized the rates from Maritime Province points to eastern Canadian markets with those from Portland and Boston. Even with this subsidy, the duty on American fish was all that prevented Portland and Boston from capturing the bulk of the trade in fresh fish. This subsidy is now off, but the duty is all that prevents the American producers from capturing the Canadian market. Similarly, on the Pacific coast Alaska salmon and halibut would enter into dangerous competition with the Canadian produced article if allowed to be landed at Prince Rupert and Vancouver and shipped from there duty free to Canadian markets.

In rebuttal of the above it may be advanced that the United States is a consumer of fish and that Canada is a producer. But it is asserted that during periods of heavy landings by American fishing fleets, Canadian markets would be made dumping grounds. Also fear is expressed that American trawler owners

will find a greater stimulus in developing their already large fleets if they have the Canadian market to use for surplus catches.

There are many arguments for and against—all of which deserve consideration. We believe these arguments should be aired freely and the Editor of the "Canadian Fisherman" would be glad to give publicity to such in order that the best opinions of the industry on the subject may be gained. We will undertake to make a digest of all communications on the subject and publish, without editorial prejudice one way or the other, the opinions of both sides on the question—one which is destined to be of vital importance to the whole fishing industry of Canada.

FISHING SCHOONER RACE.

A sports carnival is to be held in Halifax during the first week in October, and as a sort of preliminary canter to an International Sailing Race, a contest for fishing schooners will be sailed from Halifax to Lunenburg, N. S. The "Halifax Herald" has already offered a trophy for the Fisherman's Race and it is expected that a number of entries will be forthcoming.

It is to be hoped that the race will be held and that a number of vessels will participate as it will give quite an impetus to the suggested International Sailing Race between American and Canadian fishing schooners proposed for next year.

Much of the credit for bringing the race about must be given to Mr. Colin McKay whose articles on the subject in the "Canadian Fisherman" and other magazines and newspapers has attracted attention and interest. Mr. McKay, in addition to being a clever writer and student of economic and sociological problems, is at the same time a qualified seaman and navigator and served as an officer in one of H. M. Transports during the war. He is one of the McKays of Shelburne, N. S. and a descendant of the celebrated Donald McKay—famous American clipper ship builder of East Boston—and of Capt. Laughlan McKay—a noted record breaker in Yankee clippers. No better man could be secured to arouse the sailing spirit in his countryman than Mr. McKay whose article on sailing races appears in this issue.

AMERICAN FISHERIES SOCIETY CONGRESS, OTTAWA SEPT. 20—24TH.

The fact that the annual convention of the American Fisheries Society is to be held in Ottawa from September 20th to 24th is interesting because of two things; first, it will be the first time that the annual convention will be held outside of the United States; secondly, it is the 50th anniversary of the Society. Members of the International Association of Fish, Game, and Conservation Commissioners are meeting here at the same time, and as their membership is largely the same, and matters to come up are of mutual interest, sessions will be held conjointly. During the period while these distinguished scientists

and fish culturists from all parts of America are in session, great interest will be taken in their deliberations.

The American Fisheries Society, which met last year in Kentucky, promotes the cause of fish culture; strives to gather and diffuse information bearing on its success, and upon all matters relating to the fisheries; to unite and encourage all interests in fish culture and the fisheries; and to treat all questions of a scientific and economic character regarding fish.

Just now while there is so much discussion as to the efficacy of artificial fish propagation, and of the various hatchery systems employed, the addresses and debates should be of widespread interest.

The American Fisheries Society is offering three prizes of \$100 each for papers presented at the meeting in the following classes:

For the contribution showing the best scientific work applied to specific or general fish problems; for the contribution showing the greatest advancement in practical fish culture work; for the contribution that promises best relief of unsolved problems affecting the commercial fisheries.

The programme for the entertainment of the delegates attending has not yet been completed, but is in the hands of local members. The Chateau Laurier will be the headquarters of the delegates while they are in Ottawa. One feature of the programme will be a banquet at the Chateau Laurier, when Honorable C. C. Ballantyne, Minister of Marine and Fisheries will likely be the speaker.

A DEPUTY MINISTER OF FISHERIES WANTED.

It is reported that the present Deputy Minister of Marine and Fisheries, Mr. Alex. Johnston, is resigning from the service and that a successor will be appointed to the position. This report leads us to reiterate the views of the Fishing Industry on fisheries administration in the hope that the present may prove an opportune moment to make the change suggested.

For several years, fisheries administration and affairs have been carried on under the aegis of the Department of Naval Service. This was not at all satisfactory to the industry who felt that the fisheries of Canada were of sufficient importance to command a distinct administration—a separate Fisheries Department in charge of a Deputy Minister of Fisheries.

At the Halifax Convention of the Canadian Fisheries Association in August 1918, a resolution was passed urging the appointment of a Deputy Minister for Fisheries; in May 1919, a similar recommendation was made to the Hon. C. C. Ballantyne. In June of this year, our request was partly granted by the segregation of the Fisheries Department from that of the Naval Service and Fisheries administration was transferred to the Marine Department and Mr. Johnston acted as Deputy Minister of Marine and Fisheries.

The Fishing Industry of Canada, if it is ever going to be developed into something worth while, needs a strong man at the administrative helm. A Deputy Minister with but little knowledge of the industry and its requirements and having another important and intricate Department to administer, is not going to help our Industry very much. We are engaged in the development of a natural resource which is singularly diversified and conditions vary extremely almost in every degree of longitude from Atlantic to Pacific.

To successfully administer and promote the expansion of the vast fishery resources which Canada un-

doubtedly possesses requires the whole time, study, and effort of a Deputy Minister who understands the Fishing Industry and its ramifications.

It has been argued that a Deputy Minister does not require to have an intimate knowledge of the Industry or resource he is administering; that he is more concerned with Departmental routine, policies, and the distribution of appropriations. The futility and fatality of this theory is seen in our fisheries today.

Established on the Atlantic Coast for three hundred years and more, and possessing as we do the greatest fishery resources in the world, our progress has been lamentably slow, and it is a serious fact that there are 12,000 less men engaged in our fishing industry today than there were twenty years ago. Short-handed administration and the lack of an officer with power to do things, has seen the sockeye salmon fisheries of the Fraser River practically depleted; the oyster resources of the Maritime Provinces in a similar condition—lobsters, shad, halibut, whitefish, Atlantic salmon all going back. It is doubtful if Canadian fishermen are landing a heavier weight of fish to-day than they have done in previous years.

In his report on the Naval Mission to Canada 1919, Admiral Viscount Jellicoe, considered the fishing industry from other angles than that of war and the last paragraph in the following recommendation is significant but futile unless present day conditions are altered.

"It is very desirable that Canada should become independent of outside assistance in the work of mine-sweeping. The simplest, and by far the cheapest, method of obtaining in the war services of efficient mine-sweeping vessels is by the encouragement of a trawler fishery service on both the Atlantic and Pacific Coasts during peace. Steam trawlers are already operating on both coasts and have proved to be commercially successful. This matter is of such importance on economic grounds that I beg to draw special attention to it."

Steam trawling and drifting—the universal methods employed in Europe—and which afforded a valuable reserve of seamen and vessels during the war—have very little place in the Canadian Fisheries. Two trawlers worked for a time on the Pacific on 1918-19 catching flat-fish and cod—excellent and abundant species—but transportation rates and lack of marketing publicity killed the business and they are now withdrawn. Steam trawling on the Atlantic employs some four or five trawlers and there is very little chance of the fleet being augmented unless the situation is studied by a Departmental head who can give his time and intelligence to the fisheries alone. No drifters are employed in Canada though there are tremendous possibilities in our herring resources.

There is no limit to the development of our fisheries, but of all Canada's natural resources this important asset has featured as Cinderella, in the family of Canadian resources. Appropriation for its development and encouragement have been ruthlessly cut down while other resources, less deserving, have been fostered to the limit. Fishery affairs receive scant attention in the House except possibly from members representing constituencies who, unfortunately allow their judgment to be influenced by political consideration rather than the crying needs of the industry. The staff administering the fisheries is limited to a mere handful and the Department has been handi-

capped by being administered as an appendage to Naval Service or Marine.

Of Naval Service, Marine and Fisheries, the latter is the most important and of the greatest potential value to Canada. The two former departments bring in no revenue to the country nor do they add anything to the Dominion's growing fabric of future nationhood. The fisheries create a livelihood for the inhabitants of our sea and lake shores; they retain for Canada a sea-faring population in present danger of disappearing; they keep alive shipbuilding; they produce a cheap flesh food for the people of Canada of great future value when other food commodities soar in prices; they also introduce Canada to certain foreign markets where our canned and salt fish go.

There is no need to dilate upon the possibilities of our Fisheries, but we earnestly feel that we are not going ahead—rather, we are slipping back. And we feel that we will not progress until the Fisheries are administered by a self-contained Department under its own Deputy Minister and encouraged to exert itself for the development of the fishery resources by a sympathetic cabinet and sufficient appropriations to carry out the things that are vitally necessary to such development.

In the foregoing, no reflection is made upon the abilities of the officers and staff at present composing our Fisheries administration. As a minor Department, short-handed, financially stunted and oppressed by many varying and difficult problems, they must, perforce tackle those problems which call for the least effort and the smallest expenditure of money. A fisheries policy built up in this manner will never put Canada where she should be.

We hold no brief for any particular person as Deputy Minister of Fisheries, but knowing intimately the varied knowledge which will be required of the officer filling the position, we believe the training and ability of the present Assistant Deputy Minister of Fisheries would qualify him for the leadership of the Department we strongly suggest should be organized immediately.

Unless something is done along the lines indicated in this editorial, we venture to prophesy that, within a decade, we shall have the doubtful pleasure of reviewing some Departmental pamphlet entitled, "Some Reasons for the Non-Progression of the Canadian Fisheries"—but the main reason won't be hard to determine.

INTERNATIONAL SCIENTIFIC FISHERIES COUNCIL WILL BE FORMED SHORTLY.

Under the auspices of the Dominion Department of Marine and Fisheries, a meeting of representatives of the Canadian, United States and Newfoundland Fisheries Administrations will be held at Ottawa on September 23rd to consider a programme for co-operative scientific investigation of the deep-sea fisheries of North America.

An invitation has been extended to the Canadian Fisheries Association to have representatives present and Secretary Wallace and others will attend.

The formation of the proposed Council will be the climax to the resolution passed by the Association at its Halifax Convention in 1918 and to the work done in fostering the idea by Dr. A. G. Huntsman and the Association's officers co-operating with Mr. Found, Assistant Deputy Minister of Dominion Fisheries.

FISHERY COLLEGES A NECESSITY.

Administration Report for 1918-9 of the Madras Fisheries Department. Page 3, paragraph 8, says in part. "With a return to more normal conditions several important dormant propositions have been revived and submitted for the consideration of the Government, together with others entirely new. If we can obtain sufficient subordinates, the expansion of our activities should be rapid within the next few years, but unfortunately this presents great difficulty; indeed, I fear it will be unsurmountable till we have a technical institute or rather Fishery College, where the men we so urgently need will be able to obtain education in the theory and technique of their profession. An University education is a good foundation whereon to build; alone, it is insufficient equipment for a fishery expert even of subordinate rank."

The same condition exists in the Canadian fisheries.

DEATH OF ARTHUR P. TIPPETT.

It is with very great regret that we have to announce the death of Mr. Arthur P. Tippet of the firm of A. P. Tippet & Co., Montreal. Mr. Tippet was largely interested in the canned fish industry and operated factories on the Bay of Fundy, Nova Scotia. Throughout his life he took a very keen interest in church affairs and in business set for himself a very high code of ethics. He was a member of the Canadian Fisheries Association from the beginning and his passing away removes from the Industry a very kind and lovable gentleman.

"OH, WOULD THOSE HAPPY DAYS BUT COME AGAIN!"

A paragraph in the "Montreal Star" on the origin of names says in part regarding the name Fiske, Fisher, etc.

"The names... are derived from either of two occupations—the selling of fish or the catching of fish. These occupations were tremendously important in the Middle Ages, for the English nation subsisted largely on fish both as an economic and religious necessity. Medieval England was Catholic, and in the Middle Ages the fasts of the church were far more rigorous and numerous than today. Indeed, the Fishmongers' Guild of Old London was the most powerful of the merchants' associations for many generations.

FREIGHT RATES ARE INCREASED.

By a judgment of the Board of Railway Commissioners, the railroads of Canada are permitted to increase their freight rates by 35 per cent. west of Port Arthur and Fort William and by 40 per cent. east of those points.

It was hoped that fish would be excluded from the general increase, but the judgment handed down by the Board evidently considers that fish is not entitled to any exemption or special rating.

Needless to say, the industry do not accept the ruling with any degree of optimism as to its effect on the development of the Canadian fisheries, and the best that can be looked for is a material improvement in service and an overhauling of the rate schedules within a year.

OPPOSING INCREASE OF EXPRESS RATES.

Mr. D'Arey Scott of Ottawa is acting as counsel for the Canadian Fisheries Association in opposing the granting of flat increases in Express rates to the companies concerned.

The hearing opened in Toronto on September 2nd when the case for the express companies was presented. Hearings will be resumed at a later date in Montreal, Winnipeg, Prince Rupert, Vancouver and possibly one or two Maritime Province cities.

PISCATORIAL PARAGRAPHS.

Hon. C. C. Ballantyne, Minister of Marine and Fisheries, and Mr. W. A. Found, Assistant Deputy Minister of Fisheries, have arrived back in Ottawa after a tour of the Pacific Coast.

Mr. J. S. Eckman of the Canadian Fishing Co., Ltd., Vancouver, and a prominent official of the Canadian Fisheries Association was in Montreal during the week of Sept. 12th.

It is reported that Mr. Alex. Johnston, Deputy Minister of Marine and Fisheries, Ottawa, is resigning from the Government service shortly to enter private business.

THE LATE DR. J. H. COMFORT.

The death in St. Catharines on Sept. 6th of Dr. John Henry Comfort at the age of ninety-three years recalls the fact that for many years he was considered an authority on fishing, chiefly as a sport and pastime. Dr. Comfort was born at Niagara-on-the-Lake and spent all of his years in that district and St. Catharines where he had a large medical practice. Some years ago he was appointed police magistrate of St. Catharines but retired from active work about twelve years ago. Since then he had lived retired at Port Dalhousie where he made his last catch of perch off the pier a few weeks ago. Dr. Comfort was a kindly, lovable man and was held in the highest esteem by all who knew him.

ARE YOU IN FAVOR OF RETAINING THE DUTY ON IMPORTED FISH? DO YOU BELIEVE IN PROTECTION OR FREE TRADE IN FISH PRODUCTS? LET US HAVE YOUR OPINION ON THE SUBJECT.



Boosting Retail Fish Sales

Some Cold Truths and Good Suggestions.

It is a fact that no one acquainted with conditions will gainsay, that fish is not being properly advertised to develop the local market. It is not necessary that it should be more extensively advertised to produce better results, but it is essential that what advertising is done, be made to achieve its purpose.

In newspapers throughout the country retail fish vendors take considerable space to bring to the attention of the public what they have to offer. The space is well paid for and the aim should be to get every cent's worth of good out of it, that is, to induce the public to buy what they have to offer. Too many have adopted the scheme of newspaper advertising simply because it is the common practice and they feel that if they do not do the same, they are not up-to-date, that they are out of the running. This may be true to a certain extent, but when they buy newspaper space they are buying a marketable commodity which should receive the same attention as any other commodity purchased.

When a fish vendor, for example, is considering the installation of refrigerated show-cases in his store, he does not base his decision on the fact that Tom Jones or Bill Smith has put in similar equipment. He wants to know just how it will improve his business financially, in making a better display, preserving his stock and checking waste.

Now with his newspaper space he should employ a similar process of reasoning. He should ask himself, "What is the purpose of this purchase of mine?" Naturally, it is to sell more goods, and to impress upon the public the good values and the good stock he is offering.

But fish is different from the great majority of commodities. It is all right in advertising meat, butter, cheese or similar products, to employ the stereotyped system of setting down the name of the article and the price. This conveys all that is required, but with fish it is different.

Those who are engaged in the retail trade know that a great many of their patrons have a few "old standbys", perhaps cod, haddock, salmon, and whitefish, but when you suggest to them that sole, brill, pollock, mackerel, pickerel or some other fish may be obtained more cheaply and furnish a greater percentage of nutriment per pound, what is the question they will ask nine times out of ten?

"Well, how do I prepare it?"

That very question of theirs should give you retailer a hint regarding your advertising space. Why not answer it in your advertising space when you have on hand species which are not in general demand, and for which you wish to create a market?

For example, let me assume that you have in stock this particular day a considerable quantity of pollock. The demand is not great. Would it not strike you as being infinitely more attractive to lay out your advertisement something like this:

Pollock — 8c per pound.

12c worth contains more nourishment than a pound of spring chicken at 50c. Try a pollock dinner and use this recipe:

Boil pollock for ten minutes in salt water; let fish drain and cool; flake it; boil enough spaghetti to fill two good sized cups. Make a white sauce from two tablespoons butter, three tablespoons flour, and two cups milk, seasoned with salt and pepper. Boil it until thick. Place a layer of spaghetti in a baking dish, then a layer of flaked fish, then a layer of white sauce, with a few slices of hard boiled egg. Cover with bread crumbs. Pour a little melted butter over it and cook until well browned.

THERE YOU HAVE A CHEAP DINNER BUT IT WOULD PLEASE A KING.

Advertising of this nature, besides attracting the eye and engaging attention, will settle the question for many a housewife as to what her dinner for the day will be. How often have you heard the women of your own household read over a recipe and say, "I must try that."

In the city of Ottawa there is a certain brand of sausages which has won popularity through this scheme of advertising. The recipe for preparing them for the table brought customers.

Going a step farther into the matter of advertising, let me advise you to take pains with the preparation of your "copy", composers in the newspaper offices can interpret the layman's instructions on his copy, even if they are not couched in accustomed cryptic technicalities. Make your copy appear just as you would have it in the paper, and write instructions: "Follow copy minutely". Where you want

larger lettering make your letters larger. Where you want indentation with smaller lettering, write your copy accordingly.

For example, the material above should be planned with the "8c. a pound" prominent, and directly beneath it even more conspicuous:

**"12c. worth contains more nourishment
than spring chicken at 50c,"**

with the words underlined printed in heavier type. The recipe should then be indented and ordinary newspaper type used. The bottom lines should be carried wider and made prominent.

Those of you retailers who have been accustomed to doing snatches of advertising, try this plan. It is a safe guarantee that you will sell the goods you introduce in this way.

In order to develop a broader local market for our many varieties of sea foods, everyone engaged in the business must do his share. Every effort should be made to have patrons sample the less popular varieties, which may be obtained in abundance. But if you advertise certain fish see that they are of good quality. If you neglect this feature you may get once-in-a-while customers, but the steady patrons are the ones you want.

All along the line from the fishermen to the retail vendor scrupulous care should be taken to give the very best of fresh fish to the home market. Any attempt to burden the market with stale or poorly treated fish weakens it, and not only does the individual dealer who made the mistake suffer, but others in the business must suffer for his misdeeds.

If retailers are sufficiently interested in this matter to take it up, the Publicity Division, Fisheries Branch, Department of Marine and Fisheries, will be pleased to prepare sample advertising copy for them to demonstrate how to make these newspaper advertising more attractive.

By taking up this matter earnestly, retailers may assist materially in the movement to broaden local demand and as they individually are among the ones to profit by a larger market, they should take the opportunity to help.

THE GREEK FISHING INDUSTRY.

Greece with its extended coastline has a fishing industry of some considerable importance, not only along the shores but in the neighboring waters. The local fishermen dispose of their catch, consisting practically of tunny, sardine, mackerel, gudgeon, mullet, and smelt, in the coast towns, where it is consumed or else sent inland.

Not only has Greece this deep-sea fishing, but the Government own about 75 fish-breeding ponds and fish areas located both in salt and fresh water. The revenue derived from the exploitation of the Government fishing grounds during the ten-year period ending 1913 amounted to approximately 2,000,000 dr. The Government privilege for the ten-year period ending 1924 will net 5,000,000 dr.

Before 1911 the Greek fishing industry was conducted in a most unsatisfactory manner, but since the creation of a Bureau of Fisheries in that year under the Minister of National Economy appreciable improvements have been made. Fish conservation and better methods of fishing have been introduced, while Government inspection of the native fisheries is obligatory.

AMERICAN FISHERIES FIGURES.

The "American Exporter" (New York) has published some startling figures showing the extent of the American fisheries. It says:

"The total value of the American fish crop, including Alaska and the insular possessions, is probably \$150,000,000 at the present time, though the latest official figures representing the output prior to the advance in prices resulting from the war seems to justify an estimate of approximately \$150,000,000, compared with \$40,000,000 * as the value of the fish crop of Canada; Great Britain, \$52,000,000; France, \$33,000,000; Russia (in 1911) \$50,000,000; Germany, \$12,000,000; Scandinavian States, \$25,000,000, and Japan, \$50,000,000.

"In Europe, as a whole, the recorded fish crop in the latest available year is \$225,000,000; for North America (United States, Canada and Newfoundland), \$175,000,000, and Japan, \$50,000,000, making the total for the countries supplying official figures \$450,000,000. For the remainder of the world, Asia, Africa, South, and Central America, Australia, and the islands of the Pacific, there are only estimates, but these estimates bring the total of the world's fish crop at the place where taken from the seas at above \$50,000,000, suggesting that the sums paid by consumers probably exceed a billion dollars per annum.

"The world's oyster crop, it was estimated, amounts to approximately \$25,000,000 a year in value, of which four-fifths are grown in the waters of the United States."

* Now \$60,000,000 in value.—Ed. C. F.

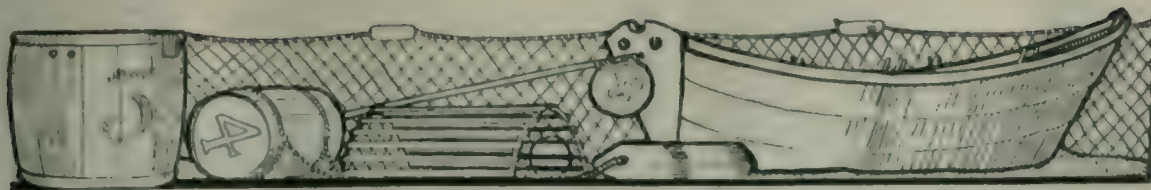
ONTARIO GOVERNMENT FISHERIES.

Hon. F. C. Biggs, Minister of Public Works has just returned to Toronto after having completed a thorough inspection of the fisheries at Lake Nipigon. In an interview he stated that 10,000,000 whitefish fingerlings had been placed in the lake this season, which is five times the number of fish caught since the Government has been taking fish from the lake. He also said that he was very favorably impressed with the fishing business being conducted on the lake. However, he admitted that very strong pressure was being brought to bear upon the Government to get out of the business, Premier Drury having said some time ago that the Government was considering closing the fisheries. The Minister in his attitude appeared to favor the continuance of the fish business by the Government.

After his return Hon. Mr. Biggs announced some changes in the outside service of the Game and Fisheries Branch of the Provincial Government. He states that some of the men are 80 years of age and one is blind. About 240 have received notice to quit. These men are paid only small yearly sums for a certain period of work. They will be replaced by a permanent force of about 40 capable men, who will receive a good annual salary.

DR. FRASER RETURNS FROM HONOLULU FISHERIES CONGRESS.

Dr. C. McLean Fraser, who represented the Canadian Fisheries Association at the Honolulu Pacific Fisheries Congress in August, has returned to Vancouver. His report will be published in the "Canadian Fisherman" shortly.



Fisherman's Vessel Race

Interest Awakening in Scheme.—Some Old Wind
Jammer Records.

By COLIN McKAY.

The suggestion that an ocean race between Canadian and American fishing vessels should be held to celebrate the conclusion of the Fisheries Treaty has aroused a great deal of interest in the Maritime Provinces. The "Halifax Herald and Mail", "The St. John Globe", and various other journals have commended the idea, and leading men in the fishing industry have expressed the hope that steps will be taken to carry it out. William Duff, M.P., Mayor of Lunenburg, the Canadian Grimsby, says the project is an excellent one, and that if it materializes Lunenburg can be relied to be represented by one of her able fishing vessels—probably a craft specially designed for the occasion. Mr. Duff suggests that the course should be from Nova Scotia to New York. Mr. W. C. Smith, one of the leading fishing vessel owners of Lunenburg County, strongly approves the idea, and says it should have the support of the Dominion and Provincial Governments, as well as of the fishing ports. J. J. Kinley, M.P.P., for Lunenburg, endorses the proposed international race, and advocates a fishermen's race between Lunenburg and Halifax this year as a sort of preliminary. The Sydney correspondent of the "Halifax Mail" says the people of Cape Breton have received the proposal with enthusiasm, and are ready to build a vessel to enter the race, or contribute to the cost of one to represent Nova Scotia. Old salts and fishermen, he says, want to see a real ocean race—not a lady-like saunter of fair weather freaks, drifting with the summer zephyrs over an inshore course, like a mill pond.

Out of the suggestion for an international ocean race has grown a proposal for an inter-provincial fishermen's regatta, and Halifax is already talking of holding a big aquatic carnival next year, and staging a fishermen's race at the same time. It is felt that if once such a regatta is held, and substantial prizes offered, it will be beneficial in the way of stimulating a healthy rivalry between the various fishing districts, and encouraging the construction of improved types of vessels and boats. Moreover, the fishermen from different parts would be brought together, and given an opportunity to swap experiences, and compare notes on different methods of catching fish and curing them. And probably the Department of Fisheries would consider it a good opportunity to send experts to lecture on the fisheries, and give demonstrations of new methods of curing fish. The same development would probably take place on the Great Lakes and on the Pacific coast.

The Dominion and the Provincial Governments might very well be asked to make grants for prizes calculated to attract a large attendance at the pro-

posed annual regattas. At present they vote large sums to encourage agricultural exhibitions, and tens of thousands of government money go into the farmers' pockets in the form of prizes. Why shouldn't the fishermen have similar encouragement? Of course at these events provision would be made for races between all kinds of craft from Grand Bankers to motor boats.

The "St. John Globe", one of the leading dailies of the Maritimes, says:

SPORT AND BUSINESS.

"One of the developments of the ambitious suggestions of a Canadian challenge for the America's Cup has been a proposal for an international fishermen's race. The suggestion has created far greater interest and enthusiasm, at least in the Maritime Provinces, than has been aroused by the larger project, which presents in its successful carrying out many difficulties and promises no greater return than sentimental victory in a race that is the sport of millionaires and has no practical value. In commenting on the suggestion of fishermen's race, the Moncton Transcript makes some comments which are of business interest to St. John:

The idea of an international fishermen's race has been received with an enthusiasm in Nova Scotia which finds no echo in this province. Now it is suggested that Nova Scotia should take the lead in establishing an annual regatta, open to the fishermen of Eastern Canada. This looks like a good idea. More rivalry between the provinces and the various fishing communities of a character calculated to encourage and improve the building of fishing boats would probably have a good effect. Bringing representative fishermen together at an annual regatta would spread new ideas and methods and help the general development of the fisheries.

New Brunswick has few, if any, fishing vessels that could give a race to the larger type of Nova Scotia fishing vessel employed for trips to the Grand Banks. This is hardly to our credit, considering the shipbuilding reputation of this province in the past. It probably, also, indicates a lack of enterprise in developing our fisheries. Why should Digby be an important fishing port, while St. John and ports in Charlotte county which are nearly as close to the fishing grounds and nearer the Canadian markets have practically no deep sea fishermen.

Should the discussion of the race project result only in developing keener thought of the questions the Transcript raises the discussion must be beneficial. In consideration of industrial development plans, the question are we making the most possible out of the

fisheries which are at our doors must always be before St. John. To do so is of far more importance than to capture the America's Cup or to win a place in an international fishermen's race."

According to the "Halifax Herald" sportsmen are as keenly interested in the proposal for an ocean race as fishermen, holding that it is more of a sporting proposition than cup-racing under present rules and conditions. It is claimed that the typical deep-sea fishing vessel could run away from the cup racers in any kind of a breeze with a stout sea running; and it is argued that in addition to being a good international sporting proposition an ocean race between fishermen, pilot boats, or any other commercial craft that might choose to enter, would be interesting and valuable from the practical standpoint. On the other hand, it is not easy to fathom the practical value of the modern cup races. The evolution of these expensive racing machines has had little or no influence upon marine architecture. Even the flying machine has its commercial uses, but the modern racing machines provide a few days entertainment for millionaires, and thereafter are usually sent to the scrap heap. The statement attributed to Mr. A. C. Ross that the modern cup racers are similar in design to fishing vessels is beside the mark. The fishing vessel's under body is somewhat similar in design to the early cup racers, but rather different from the latest freaks. In any case the cup racing machines are not good seaboats, as the fishing vessels must be; they have solved no problem in the making of seaworthy craft; and except in very light winds they have not solved any problems of speed under sail.

The best speed credited to the cup racers is fourteen knots, and that in racing trim and only for short spurts. Often fishing vessels do better than that, and even merchant ships, built for cargo carrying, often show a better speed.

Other yachts have made better speed records than the cup racer. The British schooner yacht "Rainbow" travelled 60 miles in four hours, and for a time logged 16½ knots. But she was a much bigger craft than the cup racers.

When we consider the records of the old clipper ships, built for commercial purposes and sometimes paying for themselves in a single voyage, the question poses itself: Why doesn't some modern millionaire build a racer on the same lines and of the same size, and show yachtsmen something about the real possibilities of speed. The clipper "Lightning" ran 436 nautical miles in twenty-four hours; the "Sovereign of the Seas", 424 The "Donald McKay", 421, and the "James Baines", 420. The best day's run recorded for a cup racer is that of the "Vigilant"—255 miles. Whereas the "Lightning" averaged 18½ knots for a day's run, the cup racer averaged only 10.62 knots.

It is fitting that the Maritime should challenge America to an ocean race, for Maritime men were associated with the greatest triumphs of the sailing ship in the epic days of the clippers. The biggest and fastest of the American clippers were designed and built by a native of Nova Scotia, Donald McKay. When the "Lightning" made her famous day's run, she was in command of Capt. James N. Forbes, who had made a name for himself as commander of the "Marco Polo", the most famous clipper built in St. John, N. B. But on this voyage Forbes was accompanied by a brother of the builder, Capt. Lanchlan McKay, who had made some remarkable voyages in the "Sovereign of the Seas", and whose giant clipper "Great Re-

public" had but recently been nearly destroyed by fire at New York. In the hands of these two noted skippers the "Lightning" developed her best speed and earned the distinction of leaving in her wake more miles of salt water in twenty-four hours than any other sailing ship that ever ploughed the seas. She left Boston in February 1854, bound to Liverpool, where she had been sold to James Baine's Australian Black Ball Line, and when near the Irish coast made her great noon to noon run in a gale of wind. As she carried away several sails during this time, and did not have all the wind she needed during the first part of the day, she evidently at times must have travelled through the water at a greater rate than 18½ knots. On a record voyage from Melbourne to Liverpool, the "Lightning", being well ballasted with \$5,000,000 in gold nuggets and dust, ran 3,722 miles in eleven consecutive days; making 412 miles in one day. Forbes in the "Marco Polo", the first clipper to enter the Australian trade, had set the pace over the great ocean race course between Liverpool and Melbourne, but though he made better voyages in the "Lightning" he never equalled the James Baine's record of 63 days for the outward voyage. The "Baines" was built by Donald McKay, and was about five hundred tons larger than the "Lightning". On June 18, 1856, an entry was made in her logbook stating that when the log was hove the ship was going through the water at the rate of 21 knots. She was then owned in Liverpool and commanded by a British master.

In later years British clippers made voyages quite as remarkable as those of the American built clippers. But the British clippers were smaller craft, long and narrow, and could not stand up to heavy weather like the broad-beamed American clippers. The British clipper "Thermopylae" duplicated the "James Baines" run from Liverpool to Melbourne of 63 days, but while the "Baines" registered over 2,500 tons, the British clipper was only a 1,000 tons. The British clippers were unrivalled in moderate weather, but Lieut. Manny once wrote that the "Great Republic" never found wind enough on the ocean to bring out her capabilities, the "Donald McKay", the next largest American clipper, made her best day's run in a hurricane that wrought havoc with many ships.

ASSISTANT INSPECTOR J. A. MOTHERWELL.

The Logical Successor to the Chief Inspector's Office.

When the Hon. C. C. Ballantyne, Minister of Marine and Fisheries, was in Vancouver he strongly intimated that upon the retirement of Col. F. H. Cunningham from the Chief Inspectorship of the Dominion Fisheries for British Columbia, the office would be filled from within the ranks, and it is unofficially understood that this would mean the promotion of Mr. J. A. Motherwell, who at present is Assistant Inspector.

Mr. Motherwell joined the department in the Spring of 1914 at New Westminster where he still resides. He served overseas with the 131st regiment, which he joined as a lieutenant and rose to the rank of Major. He was severely wounded in action.

Mr. Motherwell has made a most excellent record in his present position, and is well liked and respected by all who have had occasion to come in contact with him. His popularity extends to both the Fishermen and canners. His record as a hard working official is well known, and his understanding of the problems affecting the industry at the present time well fit him for the higher position.



Market for Fish Products in Argentina

Trade Commissioner B. S. WEBB.

Buenos Aires, July 5, 1920.—In view of the interest which packers of fish are now showing in foreign markets as an additional outlet for their products, some information on Argentina as a market for Canadian fish products will doubtless be of interest. This Republic has always been a large importer of dry-salted fish and canned fish products, imports under these heads having steadily risen in pre-war years to a total of 14,000,000 kilogrammes, this figure representing the importation during the last of the pre-war years, 1913. Difficulties in obtaining supplies, consequent on war-time conditions, reduced imports during succeeding years to the following figures:—

Years.	Kilogrammes.
1914	10,101,720
1915	8,929,652
1916	7,335,145
1917	5,587,884
1918	3,724,360

After the Armistice imports began to increase, and although the figures for all of 1919 are not yet available, the imports for the first half of that year (2,213,925 kilogrammes) indicate that the trade is recovering, and information gathered from other sources justifies the belief that before long Argentina will be purchasing dry-salted fish and canned fish products to the same extent as formerly.

The classes of fish products consumed locally which can be supplied by Canadian packers and curers are dry-salted codfish, canned salmon and lobster, sardines in oil, and oysters. There is also a smaller demand for salted herrings and smoked herrings. Other kinds of canned fish products can also be sold in this market.

That Canadian fish products are readily saleable on this market has been proved by the results obtained from the few direct shipments which have been made, and there can be no doubt that a large and permanent

outlet for fish products can be secured if a determined effort is made.

Value of Argentine Market.

The appended figures, extracted from the official publications, show the importation into Argentina of dry-salted and canned fish products during 1913 and subsequent years. It should be noted that the item "Fish in Pickle and Pressed" includes sardines in bulk, the packing of which is referred to elsewhere in this report. Canned salmon and lobster is doubtless included under the heading "Conserved fish in tins," together with any other canned fish product not specially mentioned.

Countries of Origin.

The principal countries of origin of the several kinds of canned fish imported into the Republic is shown below, the figures quoted being those relating to imports during 1913, which has been selected for the purpose of comparison as being a normal year:—

Sardines—		Kilogrammes.
Total imports		4,984,616
Spain		3,198,313
Norway		1,041,194
Portugal		248,000
France		223,093
Codfish, whole—		
Total imports		5,335,739
Norway		3,648,328
United Kingdom		1,078,888
Germany		460,453
United States		35,995
Fish, in pickle and pressed—		
Total imports		1,383,653
Spain		785,883
Holland		206,178

	1914	1915	1916	1917	1918	Half of
	Kilos	Kilos	Kilos	Kilos	Kilos	1919
Sardines in oil	2,629,193	2,592,985	3,163,816	1,861,349	1,418,641	970,572
Codfish whole	4,455,396	3,788,563	2,035,448	1,872,347	615,627	611,800
Fish in pickle and pressed	1,363,396	1,204,145	909,162	1,100,570	833,411	280,630
Conserved fish in tins	947,275	696,987	798,224	435,033	647,258	221,735
Anchovies in pickle	73,600	84,423	72,701	111,230	78,527	88,244
Herrings, smoked, in cases	58,995	52,465	25,104	570	.....	9,616
Codfish, cut	180,337	181,356	132,949	62,329	7,128	6,620
Herrings, smoked, in kegs	840	6,624	2,016	507	60	1,996
Stockfish	248,685	260,348	66,890	45,144	10	19
Oysters	143,738	61,756	128,835	98,825	96,698	12,693
	10,101,720	8,929,652	7,335,145	5,587,904	3,724,360	2,203,925

Germany	190,494
Italy	154,074
Conserved fish in tins—	
Total imports	1,421,712
Spain	447,277
Italy	408,771
United Kingdom	204,978
United States	149,926
France	90,623
Canada	72,384
Anchovies in pickle—	
Total imports	77,897
Italy	43,139
Spain	34,718
Herrings, smoked, in cans—	
Total imports	85,539
United Kingdom	79,129
Germany	3,778
Italy	1,980
Codfish, cut—	
Total imports	297,807
Norway	208,140
Germany	74,416
United Kingdom	5,688
Herrings, smoked, in kegs—	
Total imports	20
Holland	20
Stockfish—	
Total imports	278,773
Norway	203,732
Germany	42,833
Italy	14,529
Oysters—	
Total imports	212,810
United States	98,065

Detail of Imports.

The statistics of imports of canned fish reproduced above, while valuable as showing the purchasing power of the Republic, countries of origin, etc., do not furnish exporters with information regarding certain classes of canned fish which can be exported from the Dominion on a large scale; salmon and lobster, for example, are not mentioned. In order to ascertain just what are the classes of canned fish imported into the Republic, a careful examination has been made of the manifests of every ship entering the port of Buenos Aires from January 1 to June 30 of the current year. The information thus obtained, supplemented by indications received from importers, justifies the estimate that the imports of the several classes of canned fish for the current year will be approximately:—

Sardines in oil, tins of 150 to 500 grammes (cases)	159,500
Codfish, in boxes of 100 lbs. (boxes)	77,800
Herrings salted in barrels or in cans (packages)	47,670
Salmon (cases)	29,950
Stock fish, boxes 40 to 50 Kg. (boxes)	14,860
Pressed sardines, small drums (drums)	6,900
Lobster (cases)	6,440

Herrings, smoked, in tins (cases)	5,500
Tunny fish (cases)	2,800
Oysters (cases)	1,200
Chicken haddies (cases)	950

The quantities imported during the six months in question came to the order of 225 consignees in all, most of whom are wholesale grocers; certain quantities came to the order of general merchants and export trading companies, whilst a few cases were sent to the order of commission agents.

Packing.

From inspections of wholesale grocers' showrooms, and in response to inquiries, the following information regarding packing has been obtained:—

Sardines in tins range in size from 150 grammes to 500 grammes (28 grammes=1 ounce). The size most sold is the 180 to 200-grammes size. A case of Spanish sardines usually contains 40 tins, but Norwegian packers are using a case containing 100 tins and this is now the most popular sized case. Six or seven-ounce tins and 100 tins to a case is therefore the most suitable style of packing for sardines.

The Norwegian method of lithographing sardine cans instead of labelling them has much to commend it. When labels are used, considerable trouble and loss can be caused by leakage of oil from a blown can; in fact one blown can may damage the labels of the contents of the whole case. The key opener is attached to the bottom of the can by means of a tinplate clip, fastened with a drop of solder, and the tins are packed tightly into a close-fitting case.

Codfish, whole, dry, salted, comes in tin-lined cases containing 45 to 50 kilogrammes. A small percentage of the imports relate to cut, dry-salted codfish; this fish is bound, put into oblong pieces, and packed in hermetically sealed tin boxes containing 10 kg. and 20 kg.

Salted herrings are packed in barrels, 60, 120 and 240 fish to a barrel, and also in tins of 12, 24, and 50 fish, packed in cases containing 56, 24 and 12 tins respectively.

Salmon was sold before the war in 1-pound tins, but the demand now is almost entirely for ½-pound flats; 48 tins go to a case.

Stockfish arrives in tin-lined wooden cases containing 45 to 50 kilogrammes.

Sardines.

Pressed sardines are sold by weight in the retail stores. They are packed in small wooden kegs about twelve inches in height and some eight or nine in circumference. Similar-sized tins are also used as containers. The fish are laid in the tin with the tails converging to the centre and the heads pointing towards the outer edge. Each keg or tin carries from 400 to 500 fish with a sprinkling of tomato paste or oil.

Lobster.

Lobster is sold in ½-pound and 1-pound flats, 48 1-pound tins and 96 ½-pound tins to a case.

Herrings.

Smoked herrings come in tins of 12, 24 and 50 fish packed in cases containing 56, 24 and 12 tins respectively.

Labelling of Cans.

It is stated elsewhere that sardines can be shipped without any adhesive label, but the lithographing on the tin should approximate to the subjoined suggestions for the labelling of other fish products: An attractively-coloured lithographed label should be used carrying an illustration of the contents of the can. In

a cosmopolitan country such as this a verbal description of the contents does not convey so clear an idea as a pictorial representation. The descriptive matter, if any, should be in Spanish and the words "El Canada" or "Canadiense" should be given prominence if possible. In addition to the lithographed label a small printed label should be attached to the top or bottom of each can, bearing the words, in English: "Packed in Canada, net weight of contents... grammes." This last is essential.

Selling Connections.

Exporters of fish can hardly expect to establish business relations with importers; their competitors in other countries are approaching the wholesale grocers, who are the importers of fish products, through local representatives, and Canadian exporters must place themselves on a parity with their competitors in this respect if any large volume of trade is to be secured. It is not always easy for an exporter to get into touch with a suitable local agent, but there are a number of English-speaking manufacturers' representatives engaged in calling on the wholesale grocery trade, and the services of this office are available to exporters who desire to form a local connection. Perhaps the best way to initiate export business to Argentina is for the exporter to send down a small shipment to a local agent on consignment, thus enabling him to place a certain number of cases with each wholesale house, also on consignment. If and when these cases are disposed of, the agent would solicit signed orders which would be forwarded to the exporter, together with bank references and information on the financial standing of the importer. Goods should be invoiced direct to the importer in Canadian dollars, and documents would be forwarded through a Canadian bank for delivery to the customer with a sight draft or 90 days' draft attached as the case might be. Now that ocean freight rates are readily obtainable in Canada, only c.i.f. prices should be quoted.

Import Regulations.

The Argentine authority charged with the duty of inspecting food products imported for consumption is the "Departamento Nacional de Higiene". This department formulated a set of internal regulations which were sanctioned in 1914, and these regulations are supposed to be in force to-day. They provide for the inspection of consignments of fish products imported for consumption. A permit for entry is required, which is only granted after inspection. Should there exist any doubt or suspicion of decomposition, samples are extracted and submitted to analysis. The inspection and analysis being favourable, a "suitable for consumption" certificate is issued, without the presentation of which the customs authorities will not permit the entry of any consignment of food products. The entry is prohibited of any consignment found not to be in a good state of preservation, to contain colouring matter, antiseptics, or other substances considered noxious to the health. Some of the more important regulations are reproduced below:—

Art. 343.—The packing labels of products introduced into the country must indicate clearly the nature and weight in kilogrammes of the product, manufacturer and origin, and if required the date of manufacture.

Art. 344.—The weight expressed on the label must be the net weight of the contents.

Art. 345.—The tin or other metal cans used in the preservation of the product must be tinned inside with fine tin. The tin used for this purpose must be uniform and must not contain any cohesive solution, so

as to permit of the proper preservation of the product. The metal employed in the interior solderings of the cans must also be of the best quality.

Art. 346.—Fine tin will be considered as that which does not contain more than 1 per cent. of lead, nor more than five milligrammes of arsenic or antimony.

Art. 347.—Metal recipients or other materials used in the preparation, preservation, or transport of alimentary substances, must be such as will not be shown by analysis to contain any substances considered noxious to the health.

Art. 348.—Cans which show signs of having been opened, or of the contents having been re-sterilized, as can be detected by the solder marks and the organoleptic character of the contents, will be immediately rejected.

Art. 349.—Tins or wrappings which show signs of having been opened or manipulated for the purpose of modifying, altering or prolonging the conservation of the product, will be immediately rejected.

Art. 350.—Tins with pierced lids, caused by decomposition or production of gases inside the tin, will be rejected in the same manner, as the lids should either be flat or offer a concave surface caused by the vacuum produced during the sterilization.

In the case of bottles or other recipients there should be no formation of gases or other change noticeable or otherwise they will be rejected.

Art. 351.—Any other accessory which is used in the manufacture for the security or protection of the conserves and which comes into contact with them must not contain any substance considered noxious to the health.

Art. 352.—In the wrappings, such as tin foil, paper, cloth or any other covering which serves as a protection and which adheres to the product must not contain any noxious substance, nor colouring matter of mineral or coal tar origin.

Art. 353.—Foodstuffs, whether in tins or not, must present all the organoleptic properties corresponding to a wholesome state of preservation and must not contain any substances capable of diminishing the nutritive value of the product or antiseptic or colouring matter or chemical product.

Art. 354.—Where the contents of the can are liable to decomposition after having been opened and exposed to the air, it is compulsory to indicate, by means of a small label, that the product is for immediate consumption.

Art. 355.—Common salt, vinegar, oil, dripping, sugar or vegetable condiments, as well as charcoal utilized in the preservation of alimentary products, must not contain any impurities which might cause decomposition.

Art. 356.—The preservatives and antiseptic substances prohibited in the elaboration of alimentary products are the following:—

Boric acid and borates.

Hydrofluoric acid and its salts,

Salicylic acid and its salts,

Benzoic acid and its salts,

Sacharine or other edulcolouring matters.

Mineral or artificial colouring matter used in external wrappings and which comes into contact with the alimentary products.

Art. 329.—If within four days after having been declared unfit for consumption, the alimentary product should not have been re-embarked, the custom house authorities shall proceed to destroy same by burning.

Art. 330.—In case a consignment should be found to be partially in the conditions expressed in Article 328,

entry will be permitted only of such products as have been found to be wholesome, the separation of which must be effected by the interested party in the presence of the officials nominated for the purpose. Should it not be convenient to the interested party to follow this course on account of the interested party to follow this course on account of the large percentage of goods affected, the whole consignment will then be destroyed.

The internal regulations quoted above, however, are not being enforced in their entirety. In practice it is sufficient that a consignment of canned fish should present a wholesome appearance and not contain colouring matter or preservatives, that the net contents in grammes should be stated, and that there should not be a second blowhole in a can. A second blowhole in a can is to be avoided, as the health authorities are inclined to regard this as a sign of decomposition and subsequent reesterilization. Explanations have been offered tending to demonstrate that a second blowhole is not necessarily a consequence of reesterilization, but

the authorities still regard consignments containing such cans with suspicion.

The municipality of the city of Buenos Aires has recently been actively pursuing a "pure food" campaign. It has recently sanctioned a new ordinance regulating the sale of preserved vegetables and foodstuffs. This ordinance does not as yet apply to canned fish products, but it is expected that its scope will be extended to include all preserved foodstuffs. Under the provisions of this ordinance the class of oil used in contents will have to be clearly stated, also the net weight of contents in grammes. Copies of the National Department of Health Internal Regulations and the new ordinance of the municipality of Buenos Aires regulating the sale of preserved vegetables and foodstuffs can be consulted at the Commercial Intelligence Branch, Department of Trade and Commerce, Ottawa, reference file No. T.C.-1-104.

The names and addresses of 150 Argentine importers of canned fish can also be had on application to the Commercial Intelligence Branch, file No. T.C.-1-104.

Standardization and Inspection of Fish Products Calls for Technical Education



By COLIN McKAY

Mr. H. B. Short's paper on "The Necessity for the Standardization and Inspection of our Fish and Fish products" read before The Canadian Fisheries' Convention, presents the case in a very strong light, and evidently it was merely his intention to emphasize the more cogent arguments—not to canvas all aspects of the question. But it may serve a purpose to consider the reasons or excuses which have been urged in opposition to government inspection and branding of fish offered for sale and Natural conservatism is not the only cause of opposition. It might be argued that in this matter the Fisheries Association is to some extent putting the cart before the horse. To be of general value a government inspection system presupposes a sufficiency of trained men in the industry to cure and pack fish so that they will measure up to the standards that may be set by the government inspectors. Is that the case? Mr. Short points out that the Canadian cured product does not command as good prices as do the products of some other countries. Is this fact due to mere carelessness or short sightedness on the part of those engaged in industry? Or is it because they do not have the knowledge and experience, the technical training, necessary to cure and pack fish so as to assure a product equal in quality to that of other countries? There is evidently something in the latter view. It is significant that while the larger firms who dispose of the services of trained men are strongly in favor of Government inspection. The smaller concerns and fisheries generally are lukewarm or opposed. That also may explain the feeling that the large concerns are trying to put something over those who have no special facilities or qualifications for putting up a superior product. This is probably a short sighted view, for in any case the con-

cerns that put up a superior product tend to get the cream of the trade. And in the long run perhaps the big concerns stand to lose by standardization, relatively to the small concerns which do not dispose of equal technical skill, though the industry as a whole stands to gain by a general improvement of the quality of the product.

But this brings us to the point that standardization, and the general packing up of the quality of the product, is not a simple matter of having government officials inspect and certify certain standards. That may be the case in those branches of the fisheries which have been thoroughly industrialized—the canning of sardines or salmon, for instance, where the operatives, are more or less experts, or the processes themselves guarantee standard products. But the cod, herring and other fisheries are not thoroughly industrialized; a large part of the catch is cured by the fishermen themselves or people who do not profess to be experts. And in general they are not familiar with the special treatment necessary to create a favorable impression and command good prices in a particular market. Many wholesale houses have to re-treat or re-pack many fish sent in from the out-ports, and even under a system of inspection it may still be desirable to do this, but probably one object of standardization is to eliminate the duplication of work. Government inspection is not, however, calculated of itself to achieve the desired results; an essential condition is the spread of greater technical knowledge and skill in the treatment of fish than at present obtains among the fishing population. In other words, the government and the fishing interests should make provision for the technical training of those engaged in the industry if they want the policy of standardization and inspection to work out successfully.



Prince Edward Island Notes

By PAUL.



The Lobster Industry.

The Lobster Industry has not been a very profitable business for the packers this past season. The quantity along the Gulf shore was plentiful and the fishermen obtained about the highest figure per hundred ever obtained, but many packers, holding back for higher prices, although being offered in the early part of the season a respectable figure, are now deploring the fact that the "bottom is out of the Lobster Business". What effect will this have for the Lobster Packing Industry for the season of 1921, is hard to conjecture. Up to now, many of the smaller packers are offering their establishments for sale. Along the North Shore, eastern part of P. E. I., it is expected that many factories will exchange hands. All along the shore, this is about the result: Packers who contracted for the sale of their output in early spring, came on top, but those who had to run the gauntlet of the market, suffered. Fishermen, on the whole, fared well.

The Royal Commission, after having taken evidence in the Maritime Provinces, have found out that the Lobster Industry has slowly but steadily declined. The fact is deplorable. With the adverse condition of the market and the decline of fish, would it not be as well to remove all restrictions on lobsters and allow fishermen all privileges in fishing? The saving to the country, by curtailing the patrol boats and a number of useless officers, would be large. After all said and done, the Almighty placed the fish in the sea for the use of man, and why figure-heads, who do not know the first principle of fishing or cannot even tell a lobster from a crab, should be making laws to prohibit the poor man from helping himself to what God has placed at his disposal, is beyond comprehension. The sooner the foolish laws are removed for Lobster fishing, the sooner will lobster be in abundance on our shores, with a better pack and better quality.

The Cod-Fish Market.

The bottom seems to be out of the Cod-fish market also. Unlike the lobster, few Cod-fish have been caught this year, compared to former years, as few fishermen are after the cod owing to the low price offered. It is said that the "nigger" of the West Indies, when poor, bought plentifully of our dry cod, but since he became rich, by the cultivation of the sugar cane, which commodity has soared to the seventh heaven in price, he "am going to eat what the white man eats." No more cod-fish for the colored man while sugar sells at 28½ per lb.

Mackerel Fishing.

Mackerel fishing has been poor all along the north shore of P. E. I. Price for the salted mackerel is good on the American market. The canned mackerel, which is fast becoming an article of relish, taking the place, in many cases, to the famous canned salmon, is being offered at extremely low price per case, comparing the quality and grade of fish. All the foreign companies, who have operated fish industries on the island, have always found out our fish an excellent article of food and get a ready market for all placed

for sale, due to the salty brine of the Gulf and the excellent manner fish is being cured by our fishermen.

Let us hope, that although the fishing industry, this year, has not been as prosperous as last, that very soon, will see good prices for all kinds of fish, and a very brisk market, so that our fishermen may be able to compete, in their calling, with the husbandman or the mechanic, in making a respectable income.

ROUMANIAN MARKET FOR FISH FROM CANADA.

Many Canadian fish exporters have been enquiring about market conditions in the Balkan countries. In this connection the following extract from a letter received from Mr. L. D. Wildgress, Canadian Trade Commissioner in Bucharest, Roumania, may be of considerable interest. The letter has particular reference to smoked herrings, but the same conditions apply to all fish imports:

"I have received your letter of the 8th ultimo, file No. 25632, with regard to smoked herring, and have seen several of the principal importers of food products into Roumania. While they are all interested in the possibility of obtaining supplies of smoked herring from Canada, the difficulty at the present time is in regard to terms of payment, and the unfavorable rate of exchange.

"All the firms interviewed stated that Canadian fish exporters in order to do business with this market would have to quote c. i. f. Roumanian port and in view of the uncertain deliveries from North America payment would have to be against arrival of the goods at Roumanian port. They stated that the price at which the herrings, were offered was not high, but that the present rate of exchange precluded business on the term mentioned."

Market conditions in other countries of South East Europe are about the same as in Roumania. Reports are being secured from Jugo-Slavia and Bulgaria.

MORE CARS AT PRINCE RUPERT.

During the first part of September, the supply of refrigerator cars for the handling of fish out of Prince Rupert was much better than for some time previous. The result has been that more halibut has been delivered to the Northern port than was the case during August. In one or two cases some of the American boats thought they would go to Seattle as the price was not to their liking at Prince Rupert, but Seattle buyers took advantage of the situation, and the result was the price received at Seattle was much lower than at Prince Rupert, which made the trip South for the fisherman rather a losing proposition.

TARIFF QUESTIONS ARE NOW LOOMING UP LARGELY IN THE POLITICAL AND ECONOMICAL HORIZON. DO YOU BELIEVE IN PROTECTION FOR CANADIAN FISH PRODUCERS OR DO YOU ADVOCATE REMOVAL OF ALL BARRIERS? WRITE AND GIVE US YOUR VIEWS.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

RIVERS INLET SALMON PACK GOOD.

Up to the end of July approximately 132,700 cases of salmon had been packed on Rivers Inlet, British Columbia. Of this quantity about 90 per cent. were sockeye. So far the Rivers Inlet pack of salmon is greatly in excess of the packs of 1919, 1918, 1917 and 1916; and there is a possibility that the record of 146,838 cases, established in 1915, may be equalled or even passed. In addition to this quantity put up at Rivers Inlet it is estimated that approximately 10,000 cases have been taken away in a raw state to be packed elsewhere. The season has been a most prosperous one for fishermen in this area.

MR. FOUND SAYS PACIFIC FISHERIES IN GOOD SHAPE.

"On the whole the condition of the salmon fishery on the Western coast is entirely satisfactory," says Mr. W. A. Found, Assistant Deputy Minister of Fisheries, who has recently returned after a prolonged inspection trip. "The run to the Fraser, while comparatively small, is considerably larger than was anticipated, but this river can never be brought back to its maximum of productivity until some international agreement for its protection has been consummated."

The run of sockeye in the different areas, says Mr. Found, is quite good. Smiths Inlet and Rivers Inlet had splendid runs, and the run of sockeye in the Skeena, now the most important salmon fishing area in the province, is considerably better than in 1915 or 1916, which were the cycles of production corresponding with this year's run. The Naas alone is not showing the sign of improvement that is desired, but effective steps for its further protection have been taken.

While the demand for the red salmon is greater than the supply, Mr. Found says there is unfortunately no like demand for the paler colored grades, and there is no justification from the standpoints of food value and delicatibility for the great discrepancy in prices existing between the red and the fall varieties of the

paler colored. This lack of demand for the paler colored grades is resulting in a comparatively small back of these, and as the fish die after going from the spawning grounds, it seems desirable that a proper proportion of them should be utilized as food.

Regarding the new policy of administration, which became effective on the West coast this year, Mr. Found says it is giving general satisfaction, and the apprehension that was urged at the time it was adopted, that it would result in depleting the fisheries, has been shown to be without foundation.

The administration of the Fisheries Service on the whole coast is in a splendid condition. The laws are being well enforced by capable and energetic local Officers. Apart from the halibut fishery Mr. Found says there is not yet the development of the deep-sea fisheries that is desired. There are in the Pacific waters several varieties of excellent food fish, including the true cod, and different specimens of the so-called cod, as well as sole, plaice, brill and other flat fish. These, he declares, will one day form the raw material for a large steam trawling industry, and all that is preventing development now is the lack of realization on the part of the people of this country and this continent of the excellence of these varieties of sea food, both as regards their nutritious elements and tastiness.

This lack of development, however, does not apply to pilchards. The excellence of this variety of sea food has created a strong demand. This phase of the fishing industry on the West coast is showing rapid progress; the quantity being canned from year to year is consistently increasing, and is becoming established as one of the most important lines.

FRASER RIVER SALMON PACK WILL EXCEED 1916.

The pack of salmon on the Fraser river this season, it seems likely, will exceed that of 1916, which was the hatching year of this year's run.

Up to and including August 6th, the pack was approximately 36,000 cases, considerably ahead of the 1916 pack at the corresponding date. There were 106,440 cases put up in the season of 1916.

INSPECTION OF CANNED FISH.

One result of the visit of the heads of the Department of Fisheries to the Pacific Coast is the assurance that an act covering the inspection of canned fish will be enacted at an early date. Just what this act will consist of is not certain. A government inspection of canned fish will go a long way toward standardizing the pack of salmon on the Pacific Coast. Whether this is compulsory or not, such an act will be bound to have its effect on all the packers. It will result in the buyers calling for government inspected packs just as soon as they see that such packs are of standard quality year after year.

The writer believes that one thing should be done in connection with such an inspection act. That is every cannery (not company, but each individual cannery) should have some symbol which would be stamped into the top of every can that the cannery turns out. By so doing every can could be traced, should occasion arise to know where the fish were actually packed. The record of such symbols, besides being kept by the packer owning the cannery would also be kept in each branch of the fishery office, and at the department headquarters at Ottawa. Even though an act was passed that did not include a compulsory clause, the moral effect such a marking would have, would assist greatly in keeping the quality of fish that goes into the can up to the mark.

Both the United States and Canada have had poor packs during the past few years, and most packers have learned by experience that it does not pay to take chances and allow fish to go into cans that are not right for packing, and also to use greater care in the processing of the fish. It has been somewhat of a costly lesson to some, and to most of the canners it has shown that co-operation is absolutely necessary in so far as getting together on the standardization of the packs. Just now it seems as though the fish packers are in the most favorable mood to get together on these important questions, and it is to be hoped that good results may be obtained from any movement in this direction.

MR. W. A. FOUND GUEST OF HONOR AT LUNCHEON GIVEN BY THE VANCOUVER BRANCH C.F.A.

On August 18th, Mr. W. A. Found, Assistant Deputy Minister of Fisheries, was the guest of honor at a luncheon given in Hotel Barron by the Vancouver Branch of the Canadian Fisheries Association.

There was a particularly large attendance of members, and from out of town there was a welcome guest in the person of Mr. T. H. Johnson, General Manager of the Canadian Fish and Cold Storage Co. of Prince Rupert. Mr. Johnson is one of the British Columbia Directors of the C. F. A., and chairman of the Prince Rupert Branch.

Mr. Found assured the members present that the government would co-operate with those engaged in the fishing industry in preserving the product of the industry in a proper manner, and aid in increasing the output through fish culture the same way the other departments assist in increasing the productivity of the fields.

Mr. Found also said that the department was ready to assist in finding new and better markets for the products of the fisheries, and instructing in the packing and curing of fish. The guest of honor was very much pleased at the reception given him and assured

those present that the Canadian Fisheries Association had been of great assistance to the department, and that the officials were glad that such an association was active in assisting the industry. The department was most willing to co-operate with the association at all times.

Mr. H. S. Clements was also called upon for a few words.

Mr. Johnson brought greetings from Prince Rupert, and assured those present that Prince Rupert was the great fishing port of the Pacific Coast. The Prince Rupert member is a most entertaining after dinner speaker.

President Hagar brought up the subject of the association opposing the proposed increase in freight and express rates, which is referred to in another article. Vice President Burke, chairman of the Vancouver Branch presided.

NORTHERN B. C. CANNERIES ARE CLOSING DOWN EARLY.

Almost every boat from Northern B. C. points is bringing in the cannery workers from canneries which have closed down for the season. Very few are packing chums to any extent this season, and some are putting up light packs of pinks, although a few canneries are packing all they can. All the Rivers Inlet and Smith's Inlet canneries have closed. The Naas River Canneries had a poor year, but the Skeena picked up some during the middle of August although the canneries did not get the sockeyes they had hoped for.

SMOKED FISH FIRMS BURNED OUT.

On August 19th a disastrous fire completely destroyed the plants of the Barclay Sound Fisheries, Ltd., and Charles Anderson Fish Curing Co., which adjoined each other. The fire originated in the plant of the Barclay Sound Fisheries Limited, and quickly spread to the Anderson plant. Both buildings were of wood and highly inflammable, and it was only a short time before they were completely destroyed.

The stock of the fish in the Barclay Sound Fisheries Ltd., was insured and the building was partially insured.

It is understood that both firms will rebuild at once.

STOCKING JASPER PARK WITH GAME FISH.

The waters of the Jasper Dominion Park have again been stocked from the Hatchery at Banff, Alberta, operated by the Fisheries Branch, Department of Marine and Fisheries. Rainbow trout fingerlings on July 9th were planted in Patricia Lake to the number of 10,000, Hibernia Lake 5,000 and Marjorie Lake 5,000. Salmon trout fingerlings were also planted in Pyramid Lake to the number of 24,300.

The matter of stocking the waters of our beautiful national park is in itself a splendid work of the Federal Hatcheries.

VANCOUVER VISITORS.

Mr. T. W. Johnson, General Manager of the Canadian Fish & Cold Storage Co., Ltd., Prince Rupert spent a few days in Vancouver during the last of August.

Mr. Geo. Beatty of the Nanaimo Fish and Cold Storage Co., Nanaimo, is a frequent visitor to his Vancouver friends.

HOLDING AND FEEDING OF YOUNG SALMON PROVES SUCCESSFUL.

Recent reports in the daily papers of Seattle have shown an unusually heavy run of chinook (Spring) salmon on the Rogue, Alsea and Columbia Rivers. The peculiar aspect of the run is that they were all on at the end of the season. The early part of the season looked like an almost complete failure. This is apparently accounted for by the fact that it was late fish that were spawned and fed, and liberated late in the season, as the following report shows.

The following report is from the officers of the FISH COMMISSION OF OREGON, and is in answer to a question put to the commission asking as to what is attributed the unusual large run of chinooks on the Rogue and Columbia Rivers this year:

"The run of chinook salmon in the Rogue River this year is attributed to the fish which were held and fed in nursery ponds during the year of 1916. The Fish and Game Commission operated a hatchery which belonged to the Macleay Estate Co. about four miles up the river from its mouth. In addition to the work of the Fish and Game Commission, the U. S. Bureau of Fisheries maintained two hatcheries on the same river located further up stream. One of them is known as the Applegate hatchery where only a limited number of chinooks were hatched; and the other is the Elk Creek hatchery, located about sixty miles farther up stream.

The run on the Rogue this season is the largest ever known, and the three canneries were literally swamped with fish; a limit had to be placed on the number the cannery would receive from each boat,—the limit being placed at 600 lbs. In a report from my deputy warden stationed at Gold Beach, he advised me that a boat load of fish could be taken by laying out less than one half of the net. The fish are splendid chinooks with a heavy oil or fat content, and are in prime condition. The run hung on until the season closed on the 25th, and my reports are to the effect that plenty of fish are still in the stream and that when the season opens on Sept. 10th the fishermen will have big catches until the season is again closed.

I might say that on the Alsea River the fishermen had the best catch of chinook salmon ever known in that stream. The fish coming into that stream were the product of the hatchery four years ago on the Alsea when the first chinook salmon were held and fed. The feeding continued on the Rogue and Alsea until as late as the middle of August, when the fish were liberated.

Perhaps you have noted the report of the pack on the Columbia River, where undoubtedly the largest pack of spring chinook was made since the history of commercial fishery operations began in 1866. While there have been larger packs in one or two years in the past, these larger packs were composed of all grades and varieties. 90 per cent. of the pack this year could be graded as No. 1 Spring chinook,—a wonderful situation. While the complete figures are not available, it is fairly certain that the Columbia River Pack, up to August 25th, will go as high as 600,000 cases. Very few of the canneries will operate during the Fall season on account of the market conditions for Fall fish."

To those who are interested in the holding and feeding of young salmon the above will be of great in-

terest. Great results are bound to accrue from the 1920 run of springs on the Rogue and Columbia rivers, and without doubt the Dominion authorities will make a careful investigation of the entire situation as carried out by the Oregon authorities.

REAL RESULTS FORM THE RECENT CONVENTION OF THE CANADIAN FISHERIES ASSOCIATION.

Readers of the FISHERMAN will note an article headed "HOLDING AND FEEDING YOUNG SALMON PROVES SUCCESSFUL." This communication was addressed to the secretary of the Vancouver branch of the C. F. A., and was transmitted by the secretary of the Association of Pacific Fisheries at Seattle, Wash. Quite a few members of the C. F. A. attended the convention in Vancouver, and as a result the two associations have come closer together than would have been possible but for the fact that the convention brought the members and secretaries into close personal touch. The result has been that several matters have been handled by correspondence since the convention, and are still being handled. Another thing is that visits have been made by those interested in the rearing of young salmon to the Oregon hatchery at Bonneville, Ore., and much correspondence is being carried on which is bound to obtain better results for Canada.

Such results will repay the efforts put forth to make the conventions of the Canadian Fisheries Association a success.

VANCOUVER WHOLESALE FISH MARKET.

Local ling cod is bringing 10 to 13c per lb. The supply is not as large as it will be in another month.

Silver Smelt are coming in regularly and are selling at 12c.

There are some spring salmon coming in from the West coast, and these are selling at 15 to 18c. per lb. dressed heads on. Cohoes are arriving in fine condition and sell at 12 to 15c. dressed heads on.

Local soles are again on the market at 8c. per lb.

Point Grey herring are coming in regularly and bring c. per lb.

Halibut was scarce for a time, and the price is still 18c per lb. for mediums.

FRASER RIVER CATCH GOOD.

The run of sockeyes on the Fraser River was exceptionally good for an off year, and the fishermen made good money. This was accounted for by the fact that it has invariably been the rule that the run would increase each year after a very light run following the big run. This is the third year after the big run. The fishermen were the ones to benefit from extremely high prices this season, as they received as high as \$1.10 per fish for each sockeye delivered to the canneries. This means a high priced food product. Reports coming into the offices of the Dominion Fisheries Department are that the sockeyes are getting up to the spawning grounds in goodly numbers, and in fine condition. These reports show that the Hell's Gate area is again in good shape to allow the fish free access to the up river spawning beds.

VANCOUVER BRANCH OF THE C.F.A. STRONGLY OPPOSES PROPOSED ADVANCE IN FREIGHT AND EXPRESS RATES.

During the luncheon given in honor of Mr. Found, the officials of the Vancouver branch of the C. F. A. took occasion to get the opinion of the members present on the question of employing counsel to oppose the proposed advance in freight and express rates. President A. L. Hagar, of the C. F. A. warned the members that the fishing industry was going to get "soaked and soaked hard," and that the industry could not stand the increases like some others. Some action had to be taken and taken right now. Mr. J. S. Eckman stated that owing to the hard sledding the fishing industry had experienced during the past few years it should not be included in the increased rates. Chairman F. E. Burke of the Vancouver branch while admitting the increases might be necessary it was up to the commission to decide upon which industries the increases should be imposed, and if any was applied on the fishing industry it should not be on the cheaper grades but on the more expensive varieties. It was decided that the Vancouver branch should bear its share of the expense of employing counsel to oppose the advance in rates as proposed.

ALASKA PACKER'S ASSOCIATION PRICES FOR CANNED SALMON.

Vancouver firms received the Alaska Packer's quotations on Sept. 4th, which were as follows:

	Per Doz.
Red-tails	\$3.25
Red lb. flats	3.50
Red ½ lb. flats	2.25
Medium red-tails	2.75
Pink tails	1.50
Chum tails	1.15
King tails	3.00

IMPERIAL PRESS DELEGATES ARE VISITORS TO THE PLANT OF THE CANADIAN FISHING CO., LTD. WHILE IN VANCOUVER.

Lord and Lady Burnham, and the members of the Imperial Press delegation, as a part of their inter-entertainment program while in Vancouver, were shown through the modern fisheries plant of the Canadian Fishing Co., Ltd., on August 26th.

General Manager, A. L. Hager assisted by a corps of guides took the visiting delegates on a tour of inspection of this great fishing plant and many compliments were passed by the press representatives on the sanitary and modern methods in the handling of the different varieties of fish in all departments of the plant. A halibut schooner arrived just as the delegates were being shown through the plant and the unloading of the schooner was of much interest to the visitors, as was the salmon cannery, which was in full operation.

Several of the delegates who had partaken of light breakfasts fully appreciated the appetizing taste of the Imperial Brand kippered salmon and sable fish, which none of them had ever tasted before.

SELL CANNED FISH BY THE CASE.

By F. E. Payson, Secy. Vancouver Branch C.F.A.

Just now at the harvesting time is when the storekeeper can sell the most economical food to be had in case lots. There is nothing better for the harvest hand to eat during the hot weather, when they are working so hard than canned fish. Easily digested, and full of nutriment, canned fish is the best possible food for the rancher to give his help, and it does not require cooking. It is up to the storekeeper to push his sales of canned fish by case lots right now.

COL. CUNNINGHAM RESIGNS FROM THE FISHERY SERVICE.

The announcement of the resignation of Col. F. H. Cunningham, as Chief Inspector of the Dominion Fisheries for British Columbia was made by Hon. C. C. Bal-lantyne, while on his recent trip to Vancouver.

This announcement was made by the Minister before a delegation of the B. C. Salmon Cannery Association. The Minister said: "I am sorry to announce the resignation of Col. Cunningham. After thirty eight years of faithful service with the department he feels he should have a well earned rest, and has asked to be relieved of his duties December 31st. On his retirement the government will appoint someone to his position whom we feel will meet with the approval of those connected with the industry here. We appreciate the excellent services he has done for his country and fishing interests. He has shown great wisdom, tact and fairness in carrying on his work."

Mr. W. H. Barker, President of the B. C. Packers Association declared those connected with the fishing industry were sorry to hear of Col. Cunningham's retirement, and paid the Col. some very pleasant compliments.

In replying, Col. Cunningham thanked the Minister and Mr. Barker for their kind remarks, and said that he felt the thirty eight years service with the department made him feel he deserved a much needed rest.

During the past few years, and especially since the B. C. salmon fisheries were thrown open, it has needed the hand and mind of a real diplomat to steer the destinies of the British Columbia branch of the Dominion Fisheries Department into smooth waters, and Col. Cunningham has done this in the most admirable manner. Mr. Barker's remarks expressed the feelings of the entire industry.

SKEENA RIVER SPRING SALMON NET FISHING CLOSED.

All fishing with spring salmon nets in the Skeena river was closed at midnight on July 23rd. Under ordinary conditions the season continues until the first of October, but the new regulations of 1920 empower the Chief Inspector of Fisheries to prohibit fishing when he finds the fish are approaching the spawning condition.

DO YOU THINK AMERICAN FISH SHOULD BE ALLOWED TO ENTER CANADA DUTY FREE? OR DO YOU ADVOCATE THE RETAINING OF THE PRESENT DUTY? SEND YOUR OPINION AND REASONS TO THE EDITOR OF THE "CANADIAN FISHERMAN."

MINISTER OF MARINE AND FISHERIES HAS CONFERENCE WITH CANNERS.

Hon. C. C. Ballantyne, Minister of Marine and Fisheries, held a conference with the Cannermen of British Columbia on August 27th, while he was in Vancouver. During the conference the Minister took occasion to state that before putting into force any future important regulations, the department would consult with the cannermen and others interested in the industry. The minister stated that no steps would be taken to prohibit the use of drags, seines or trap nets until consultation with representative organizations and the fishermen.

Hon. Mr. Ballantyne expressed his admiration for the manner in which the cannermen were carrying on their business, and believed the business was never prosperous than it was at the present time. Statements made to the effect that the western coast cannermen hold a monopoly are utterly false he observed.

Mr. W. H. Barker, of the B. C. Packers Association, presented the views of the cannermen. During his remarks Mr. Barker said, "What is needed is a better understanding between the department and persons connected with the fishing industry on the coast. The official attitude during the past few years has made it appear to us that we are conducting our business on sufferance. We have been accused of holding a monopoly of the salmon-canning industry, but such a thing does not exist. Keen competition between packers is evident and many are forced to sell their product at a loss this year. Stringent regulations have been made while those engaged in the industry were not consulted. These regulations in many cases have meant a loss of thousands of dollars to the industry as supplies are purchased a year ahead and in many cases the regulations make certain supplies useless. For instance nets and seines have been purchased for the coming year and if regulations prohibiting their use are brought into force we will be left with them on our hands. Why traps should not be used we cannot understand and with all respect to Mr. Found we feel that we know more about the fishing business than he does, and our views should be considered as well as his. The Columbia River has been fished for the past 100 years and still it keeps up its pack in spite of the traps used there. Traps and gill nets must be used if we are to practice economy in securing the catch. By doing this the public may purchase fish at a lower cost. The department should consider our interests for they are its interest, as well as for the benefit of the fishermen. We have millions of dollars invested in plant equipment and are in business for all time, and must consider the future of the industry. In fairness to us and to the country we should be consulted before regulations are made by the department."

Mr. H. O. Bell-Irving asked the minister if the minister was correctly reported in a morning paper as saying that 1920 will see the end of the use of drags, seines and traps in coastal rivers and waters.

Hon. Mr. Ballantyne replied that the department was seriously considering the matter and added that he could not be held responsible for any statements which might appear in the newspapers.

"We take it that your mind is not made up?" Mr. Bell-Irving asked.

"Prohibition of the use of drags, seines and nets is under consideration by the department, but no change will be made until the B. C. Cannermen and others con-

nected with the fishing industry have been consulted" Mr. Ballantyne answered.

That a wrong feeling existed in the department of fisheries toward those engaged in the fish business was the statement of Mr. Bell-Irving, and he suggested that "Political expediency rather than the economic needs of the industry are considered by the department in passing regulations."

"Statements were made in the House of Commons that diabolical methods were used in catching fish. Why is it any more diabolical to catch a fish in a net than it is to trap any other animal?" "The most economical methods must be used and we should be permitted to use our own intelligence to secure the catch. Methods of doing this have been taken from the hands of responsible cannermen and placed in the hands of irresponsible fishermen, who have not the interests of the future of the industry at heart. Continuity and stability of the business is our aim and we feel that greater consideration should be given regulations before they are adopted. Ruination of the fishing industry faces us owing to financial and labor conditions. During the war the government urged us to produce more and now they attempt to strangle us by regulation. If conditions are not bettered what will happen is the cannermen will go on strike", said Mr. Bell-Irving.

Mr. Henry Doyle believed that a public hearing be held at which fishermen and cannermen might speak in order that officials of the department would hear conditions and views as they actually are.

Mr. F. E. Burke, Manager of the Wallace Fisheries, Ltd., stated that the cannermen were anxious to co-operate with the department, and that regulations should apply to everyone alike. The department should see to it that all regulations toward propagation and keeping up the supply of fish were properly carried out, was his belief.

Mr. Burke urged the minister to aid in an advertising campaign to make the sale of cheaper grades of fish more popular on the retail market. He thought a standard of inspection should be adopted.

Mr. Ballantyne was glad to hear the views of the association and wished them to understand that the department wished to co-operate with them in every way. He spoke of the numerous complaints received by the department from disgruntled persons all desiring something different in the way of regulations and action could only be taken after great consideration. "Since I took office", he said, "the inspection regulations have been made more severe and more patrol boats are on the coast today than ever before. The fisheries of British Columbia are on a sounder basis than ever before in their history." "I do not want to injure your business. Statements have been made to the effect that cannermen here hold a monopoly of the business but these charges are false. Your business is a legitimate one and I value and want your advice. Difference of opinion may occur but we all must get together and work in the interests of the industry."

CANADIAN QUOTATIONS IN NEW YORK FUNDS CAUSE INDIGNATION IN THE BRITISH WEST INDIES.

The Canadian Trade Commissioner in the British West Indies has received complaints from a number of firms in different islands of the British West Indies to the effect that Canadian business firms are demand-

ing payment of their accounts in New York funds. They are highly indignant and express the opinion that in view of the Preferential Trade Agreement between Canada and the British West Indies the Canadian exporters to the British West Indies should make quotations in Canadian currency.

One large importing firm in Barbados said that after giving a large order he found that payment was demanded in New York funds. He immediately cancelled the order and placed it with an English firm which gave him the benefit of the English exchange in remitting. It is pointed out that the tariff preference is given to England as well as Canada and the English do not ask for quotations in United States funds.

Another complaint coming from the British West Indies is that certain Canadian firms when written to regarding business refer the British West India inquiries to their agents in New York city. They say that if Canadian firms propose to do business through New York houses, they may as well deal directly with New York themselves.

TROLLING ON SWIFTSURE BANKS.

During the first part of September some of the trollers have been fishing on the Swiftsure Banks, which lie about 30 miles southwest of Barclay Sound on the West Coast of Vancouver Island. This is a great feeding ground for the spring salmon and every year good catches are made on these grounds. It is rather late to do any fishing as bad weather does not allow the fisherman to take many chances.

THE BRITISH COLUMBIA CANNED SALMON MARKET.

The waiting game which has been played by the sellers of canned salmon during the past few weeks is over. The opening prices of the several different large packers have been issued, and now the real selling game is being played. The brokers offices are much livelier places of business than they have been for some months. The telegraph and cable companies are reaping an increased business in tolls since matters livened up in the canned salmon market. As yet there is no real change in the attitude as regards prices. Rather it is a skirmishing round to get a line on the real requirements of the buyers, and on the part of the buyers a feeling out as to what the lowest prices will be. There is no doubt every endeavor will be made to keep the prices of the lower grades at a profitable level. The pack in these grades has been much less than if there had been a feeling of security as regards price and quickness of disposal. The prices for the higher grades will hold as there is no surplus stock of any kind, and the prices paid to the fishermen have been higher than ever before, and every one knows the increase cost in materials has been much higher comparatively than the packers have charged for their packs during the past couple of years.

It is possible that with the poor pack of Alaska fish the B. C. packers, may have an outlet that they have not had previously. It will be interesting to watch this phase of the situation.

ANGLO BRITISH COLUMBIA PACKING CO. Lists on London Stock Exchange, Also Acquires Interest in Jam Packing Business.

Confirmation of the listing of the shares of the Anglo British Columbia Packing Company on the London Stock Exchange has been received in Vancouver.

Included in the information furnished the public in compliance with the regulations of the committee of the London Stock Exchange was the following: Directors: Chairman, John Bell-Irving, Lockerbie, Scotland; other directors: E. S. H. Corbett, Send, Surrey, England; Lieut.-Colonel A. Bell-Irving, D.S.O., London; David Landale, London. Bankers: Bank of Scotland and Canadian Bank of Commerce, London. Agents in British Columbia, H. Bell-Irving, Limited, Vancouver.

The authorized capital of the company, which has its headquarters in London, is £350,000 divided into 100,000 8 per cent cumulative preference shares of £1 each, and 250,000 ordinary shares of £1 each, the issued capital being £50,000 8 per cent cumulative preference shares of £1 each and 125,000 ordinary shares of £1 each, of which 75,000 have been recently issued to shareholders as bonus shares. A further 75,000 shares have been subscribed for at par.

The acquisition of a controlling interest in the King, Beach Manufacturing Co., of British Columbia will be secured by the devoting of a part of the new issue of 75,000 ordinary shares. This company is engaged in the manufacturing of jam.

FISHERIES ENGINEER APPOINTED.

Harry A. Lynch a native of St. John, N.B., and a returned soldier with a splendid record has been appointed by the Civil Service Commission as Junior Engineer in the Fisheries Branch, Department of Marine and Fisheries. Mr. Lynch has been for some time on the Chief Engineer's Staff of the Marine Department. Immediately after his appointment, Mr. Lynch left for St. John to report to the Senior Engineer. He will look after work being done in Nova Scotia.

"CANADIAN FISHERMAN" WILL STUDY BRITISH FISHERY DEVELOPMENTS.

In order that the "Canadian Fisherman" will be in a position to advocate and advise the Canadian Fishing Industry in matters of modern development of fishery resources, the Editor will leave for England shortly and study some of the methods of catching, transporting, marketing and administering the fisheries of England and Scotland.

Developments in the fisheries have entered a new era in Great Britain. They now have a Ministry of Fisheries and an aggressive "Fish as Food" campaign is now underway in an effort to absorb the heavy landings of British fishing craft. Both these matters are of vital interest to Canadians. Several of the adverse conditions at present existing in our Industry are also afflicting that of England and it is felt that a study of the manner in which they are tackling these problems should prove beneficial to ourselves.

HON. C. C. BALLANTYNE

The Minister of Marine and Fisheries Makes Long Deferred Visit to the Pacific Coast.

When the Hon. C. C. Ballantyne, Minister of Marine and Fisheries made his trip to the Pacific Coast, it was hoped by every one engaged in the Industry that conferences of the different associations would be held at which the Minister would be present and take part. Apparently the Minister did not intend that this should be. The attitude taken did not assist in dispelling the feeling held by many that Ottawa is not as sympathetic with the Fishing Industry of the West coast as it should be. Without doubt the Hon. Minister had many matters to attend to besides the fishing industry, and in two days very little could be done in the way of conferences. Mr. Found spent a considerable time on the coast, and made a very thorough inspection of the entire coast, and as assistant deputy minister will without doubt make a most comprehensive report of the conditions of the industry as operating under the present regulations, and in connection with hatchery methods. Perhaps the Minister feels that the inspection and report of the Assistant Deputy will be just the same as if he had attended to the matter personally. Everybody knows that no one man can attend to details and carry on a department covering such a multitude of details as the department of Marine and Fisheries entails, but there is a side that is to be taken into consideration, and that is the spirit of friendliness which should obtain between those engaged in any industry, and the branch of government which has the carrying out of policies covering that industry. When a group of men representing millions of dollars invested in any given industry are granted an audience of a few minutes to meet the Minister at the head of a branch of the government regulating that industry, it appears the spirit of friendliness is not as it should be. Especially if the head of the branch is situated 3000 miles away, and it is his first trip to the district in question. This article is not written in the way of criticism except in a constructive way, and not at the behest of any body of men engaged in the industry, but at the same time expresses a feeling held by many who had hoped that the minister would have got in closer personal touch with those engaged in the industry on the West Coast.

Although the meeting arranged for between the delegation of canners and the Minister was friendly enough and matters were presented to the minister by the delegation and the minister made reply, at the same time there was not that friendly discussion which would have gone a long way toward dispelling the unsatisfactory feeling that has existed and even now exists between those engaged in the industry as regards the attitude of Ottawa toward the salmon fisheries of British Columbia. It was hoped that a personal contact with those who have their investments in the industry and with the fishermen would do much to dispel mis-understandings which have arisen between the department and those engaged in the industry. Many questions could have been discussed and a better understanding arrived at by such a personal contact and without doubt much unnecessary correspondence would have been saved for the future.

FISHERIES ENGINEERING IN MARITIME PROVINCES.

Mr. Charles Bruce the Engineer of the Fisheries Department, recently returned after a thorough inspection of the rivers in the Maritime Provinces, announces many improvements in the way of opening up rivers in New Brunswick and Nova Scotia.

At the Misquodoboit River in Halifax County an opening was made in a large unused wooden dam thus permitting large numbers of sea trout and salmon as well as alewives, shad, and bass to ascend the rivers for spawning purposes. Inspections were also made of fishways on the Mush-a-Mush and La Have Rivers in Lunenburg County, at the Medway and Mersey Rivers in Queens County, at Milton, Yarmouth County, at Bear River, Annapolis River and Victoux River in Annapolis County, at Apple River and Victoux River in Cumberland County, and at Boss Economy and Salmon Rivers in Colchester County; and information obtained for the construction of Fishways where required.

At the Medway River, where a fishway was installed last year in the dam at the pulp-mill, evidence was secured that large numbers of alewives and salmon had ascended which will be a factor in keeping the fishery in this river from becoming depleted.

The Department is now undertaking the reconstruction of fishways in four dams on the Murray River, and it is hoped that thereby this admirable river, the largest in Nova Scotia, will be opened up for fisheries.

At Lawrencetown on the Annapolis River, a fishway, built last year, was found to have proved an unqualified success admitting the ascent of shad, and salmon in large numbers. So far as this Department is aware this is the first instance of a successful fishway for shad.

On the Gaspereaux River in King's County a fishway was constructed to overcome a dam thirty feet high and results have been most gratifying, reports showing that alewives in numbers greater than have ascended the river for years having gone up.

In New Brunswick, fishways are inspected on the Petitecodiac and Pollet Rivers in Albert County and an inspection was also made of the falls on the Magaudavic River at St. George where the Department has been considering the feasibility of opening up the upper reaches of this river for fisheries purposes.

THE SITUATION OF THE DANISH FISHING INDUSTRY.

The Danish fisheries have reached a crisis more critical than that which confronts some other industries, writes *Finanstidende*. The fishermen are threatened with starvation and only charitable gifts from the Government can save them from ruin.

The reason for this is that the fishermen have bought trawlers and motor boats that are far too expensive to keep running under present conditions, when the buying capacity of foreign countries is exhausted. It is impossible to see any other way out of this distress. The countries that are able to buy have sufficient fisheries themselves or are too distant from the Danish coast, or the fish does not meet their tastes. The consequence is that the fishermen in many cases are compelled to throw the catch into the ocean again or to give up fishing.



The Dominion Biological Station, St. Andrews, N.B.

THE WORK OF THE 1920 SEASON.

Many Canadian who have visited Naples, and vividly remember the Italian "Stazione Zoologica," with its fine aquarium and laboratories; or who know the English Biological Station at Plymouth "Hoe"; or the Scottish Marine Station in the ancient University of St. Andrews; and are acquainted with the U. S. Biological Laboratory, Woods Hole, Massachusetts, the chief centre of fishery investigations in the United States; are not perhaps so familiar with the splendid Canadian Station on our Atlantic shores. This finely equipped technical research institution, operated under the auspices of the Marine and Fisheries Department, is located at St. Andrews, New Brunswick. The researches chiefly relating to fishery problems, are in charge of the Biological Board, of which Dr. A. P. Knight is Chairman, and Professor E. E. Prince, Dominion Commissioner of Fisheries, is Secretary-Treasurer.

The beautiful and fashionable sea-side resort, often styled the "Brighton of Canada," St. Andrews by the Sea, possesses the only Canadian Marine Station for fishery researches, on the Atlantic coast. It is less than two miles from the charming little town, and summer visitors have come to regard a trip to the Biological Station as an annual treat, never to be omitted. In the visitors' book at the Station may be noted the signatures of some of the most eminent men of Canada and the United States.

The scientific director, in immediate charge of the

investigations, is the distinguished and accomplished Dr. A. G. Hunstman, and the staff, most of whom receive no fee or reward for their labors, have board and rooms, with laboratory tables, chemicals, instruments, and material (in the shape of the "sea's spoils"), provided gratis by the Government. During the current season, the staff embraced more than three times the number of trained "researchers" usually occupying places in the laboratories. No less than twenty-one professors, University lecturers, and advanced workers, tackled the series of complex fishery and other problems, awaiting solution by the exact methods of modern science. McGill, Toronto, Laval, Queen's, (Kingston), Western, (London), and other Universities, were represented, on the staff, and as usual, applications to engage in Canadian research, were received from United States' Universities: but the limited accomodation enabled only one scientist to take part in this season's work, from south of the 'line', viz. Miss Jane Williamson, M.A. B.Sc. of Columbia University, New York.

What are some of the problems attacked by the eminent specialists, who spent the summer months busy at fishery and technical research in the Biological Station, St. Andrews? They covered a large field, but all related to the "watery world," and the finny and scaly inhabitants thereof. Fishery problems can never be solved unless the conditions, physical, dynamical,



The St. Andrews Biological Station in Winter.

and chemical, as well as biological, in lakes, rivers, and seas, are discovered. A farmer must know something of the nature of the soil, the chemistry of fertilisers, etc., if he is to be abreast of modern standards, and get the best results from the land. The biologists at the St. Andrews Station cover a wide and varied field of investigation, so that when their reports are issued and followed, those engaged in the taking and handling of fish can rely upon the best results being secured from their arduous toil, at sea, or in the fish mart.

The lobster supply, to take an example, is a cause of grave concern to the fishing industry. Are we to witness the disappearance of that esteemed shellfish as we did the buffalo? Professor Knight has, for some years, had the "lobster problem" in hand. But it is not one problem, it is a whole armful, hence, not one season but many seasons must be spent, in discovering scientific methods of stemming the decline in the lobster-supply in Canadian waters. No one knows, for example, what becomes of the very young lobster, after being hatched by the egg-bearing mother lobster. Dr. Knight's work, in which Professor Prince has this season taken considerable hand, has been partly in the laboratory, and partly in the field, or rather the sea.



Boarding House and Library

Some most remarkable facts, hitherto unknown, have been discovered. Baby lobsters, just hatched, have been kept in specially devised jars, some open to sunlight, and at ordinary air temperatures; others dark and kept cool with layers of ice; and under various other conditions of light, temperature, food, etc. Which of these conditions prevail in the sea, where young lobsters abound, before they reach a length of 2 or 3 inches?

The St. Andrews' workers are already prepared to answer some of these questions; but much has yet to be done. Dr. Knight, after commencing at the station, left the jar experiments in Professor Prince's skilled and experienced hands, and joined in Prince Edward

Island his assistants, Mr. D. A. Mackay, of Queen's University, and Dr. A. B. Dawson, formerly of Acadia University now of Chicago. The feeding of young lobsters, for a month or two after hatching, is difficult, as the microscopic food suitable for them, must be captured in the open sea. Supplies of copepods, or minute water-fleas had to be caught, in tens of thousands, in fine-meshed silk tow-nets, floated daily in the sea, and transferred alive to the rearing jars. Such success was achieved that baby lobsters were reared, until a very advanced condition was attained; but cannibalism resulted in the death of many before the crawling stage was reached. How to prevent baby lobsters from devouring each other is a difficulty, even when abundant food is supplied. The small copepods or water-fleas, smaller than grains of sand, abound in the sea, like mosquitos in a swamp, and Professor Willey (McGill University) has carried on laborious studies at the station upon this great source of nutriment for fishes in the sea. Dr. Willey has also included this season, studies on copepod collections from the alkaline waters of Big Quill Lake, which he and Dr. Huntsman netted, when visiting early this season those curious lakes, in Saskatchewan. Possibly valuable food-fishes might do well in those salty lakes, as floating living food appears, from Dr. Willey's studies, to be as plentiful as in the sea. Dr. J. W. Mavor, Union College, N. Y. completed an important stage of his current and tidal studies in the Bay of Fundy. These movements of the water powerfully influence the great schools of fish, and other life. Special floating bottles have been sent adrift, from a series of determined stations, and have been picked up at various points along the Canadian and U. S. shores. Dr. Mavor's prolonged work, and its mathematical and physical aspects, are already yielding results which navigators and scientists, as well as fishermen, will find most astonishing when published.

"Fish as food" formed a prominent subject at the Station, and Professor Clara Benson, an eminent biochemical authority, from Toronto University, has pursued profound researches on the food-qualities of a series of marine fishes, and these, combined with the studies of Dr. Slater Jackson, McGill University, on the history of cod, haddock, pollack, hake and flat-fishes, shows how widely various fish differ, under freezing and other processes. In some, spaces are formed of a very marked character, in the flesh, after freezing in ordinary fish-refrigerators, the small muscle being filled with ice crystals. Dr. Jackson studied minutely, under the microscope, the flesh of brine-frozen fish, and his test show how superior some kinds are as appetising food on the table. The differing excellencies of these fish, fresh and frozen, will be fully explained in the reports to be completed by Dr. Benson and Dr. Jackson. Miss Chant paid attention to the eggs, young, and growth of smelt, some new spawning grounds being visited during the season in Passamaquoddy Bay. Elaborate detailed researches on the causes and means of preventing unhealthy changes, in market-fishes, occupied a number of able bacteriologists. Dr. Harrison, Principal of Macdonald College, was at the Station for a short time, in connection with such researches, and Miss J. Macfarlane (Toronto University), Miss Symons (McGill University), and Miss Jane Williamson (Columbia University), respectively took up the bacteriology of canned lobsters, clams, and fresh herring, the latter including

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the so-called sardines of the neighboring waters. Miss Reid (Toronto University) followed the seasonal occurrences of a curious creature, a favorite food for growing fishes, viz. the glassy needle-worm (*Sagitta*). Professor Philip Cox (New Brunswick University) after completing his account of the Lumpfish, about to issue as a special Bulletin, has investigated the life of the Frost-Fish or Tom-Cod, and during the present season has given much labor to this latter food-fish. His report will be of great interest to those in the fish-industry. Professor Alexander Vachon, (Laval University) investigated several subjects, completing a report on the use of starfish as farm fertiliser, in its bearing on waste fishery materials as manure. Starfish are not apparently very valuable for this purpose. Dr. Vachon's prolonged studies carried on for some years on the chemistry of seawater, and of water from alkaline lakes, such as Big Quill Lake, have great importance in connection with sea and inland fisheries.

Science has shown how vital to fish life are the minute floating organisms, known as plankton, and the veteran authority, Professor L. W. Bailey (New Brunswick University) carried still further his diatom researches, some of these minute plants, invisible to his naked eye being the chief sustenance for oysters, scallops, clams, as well as multitudes of infant fishes. Workers on the St. Andrews' staff spent many weeks in various localities, such as Prince Edward Island and New Brunswick, where Professor Robertson (Western University London, Ont.), continued his extensive studies of the declining oyster beds, carried on for several seasons past, and Mr. A. H. Leim (Toronto) on the Shubenacadie River, added to his interesting discoveries upon the life-history of the shad, with a view to finding the best means of restoring that once flourishing fishery. Professor W. A. Clemens (Toronto) confined his labors to the inland lakes, and mainly investigated the Lake Erie herring in Western Ontario, and the possibility also of adopting artificial sturgeon-culture. The lake fisheries are greatly in need of the knowledge which Dr. Clemens' work promises to yield. The Biological Board have always included fresh-water as well as marine fishery investigations.

A great part of the Biological Station's work is carried on, of course, in the open sea, and on the fishing grounds, and in this branch the admirable scientific vessel of the station "Prince" has done notable service, under the able Captain A. E. Calder. The work of the "Prince," carried on during both the winter and summer months, has resulted in a vast amount of material being procured, much of it carefully preserved in phials, for laboratory study by specialists later. Seasonal changes in the life in the sea, and observations on the spawning of important fishes have been secured, a store of important information being accumulated during the present year.

The preparation of printed reports is now being hastened, and various publications will soon be available for fishermen, fish merchants, and the general public. A new volume of "Contributions to Canadian Biology," is nearly completed by the King's Printer, Ottawa, also some illustrated pamphlets on "New Food-Fishes", and leaf Bulletins, on new table-fishes, while scientific students will have available some more technical reports on Marine Biological subjects.

In no other country is the knowledge of the sea being more actively increased than in Canada, and the Biological Station on our Atlantic coast is recognized as the most valuable agency in giving this aid to the fisheries.

An extension of the Biological Station buildings is being talked of, as the laboratory accommodation has been severely taxed this season, owing to the increased number of brilliant Canadian scientists willing to give their talents to the task of the improvement of the fisheries. One most urgent need has been most willingly supplied by the Minister of Marine and Fisheries, viz., an up-to-date model fish-refrigerator. This will be ready for work very soon, and will be invaluable for carrying out exact scientific tests in the



One of the Laboratory Buildings

preservation and freezing of fish and sea-food products. Much of the work has been hampered in past seasons from lack of a scientific freezing plant.

In view of the very large staff of trained scientific experts this season, nearly treble of any previous record at the Biological Station, and considering the variety and importance of the fishery and technical researches being actively carried to completion, the year 1920 is without question the "banner year" of this invaluable and unique fisheries' laboratory.

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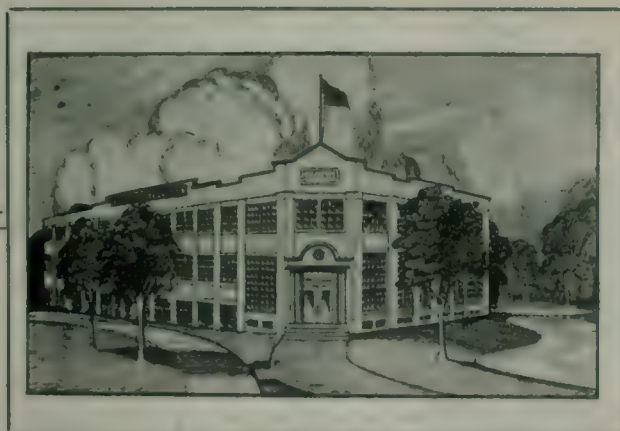
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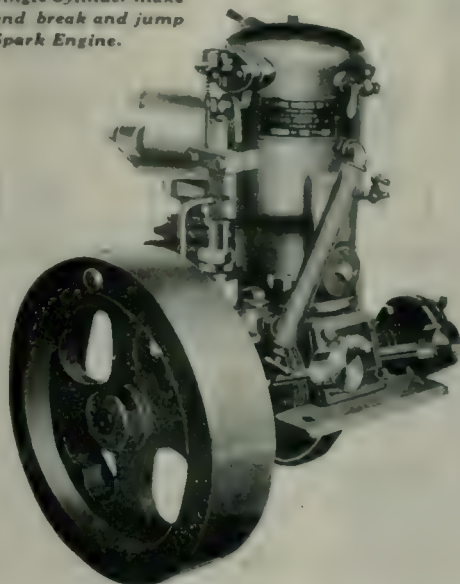
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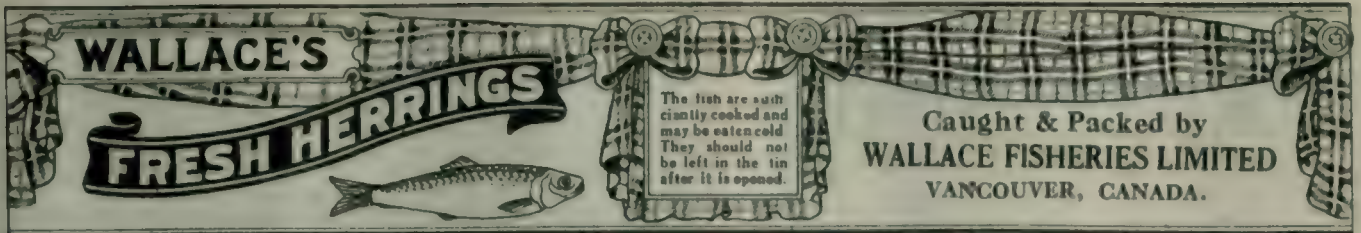
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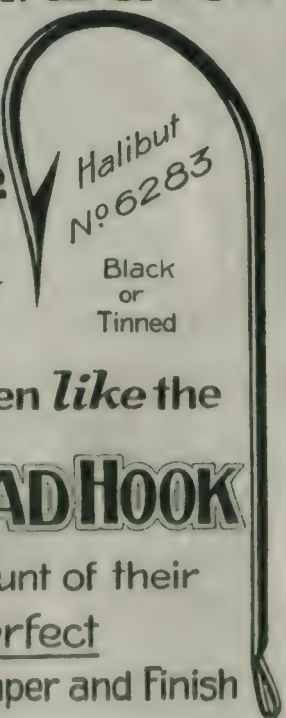


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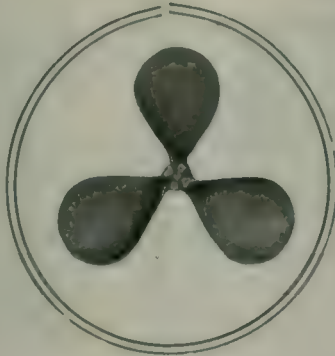
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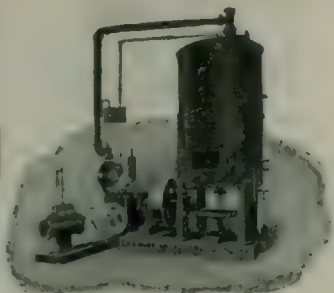
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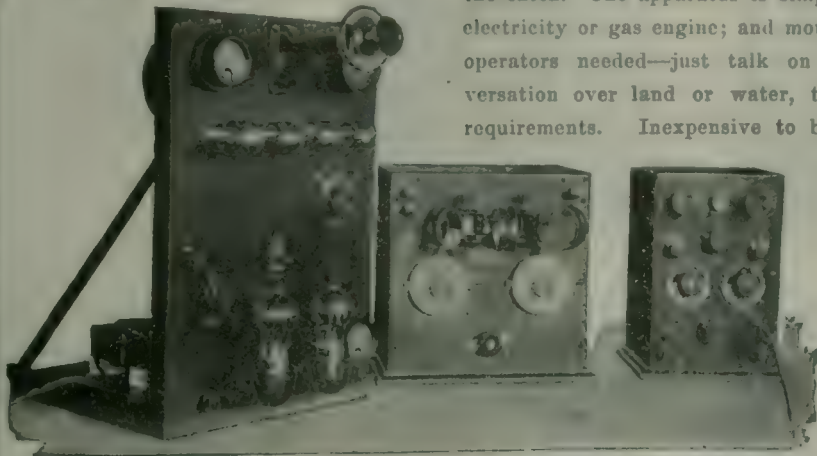
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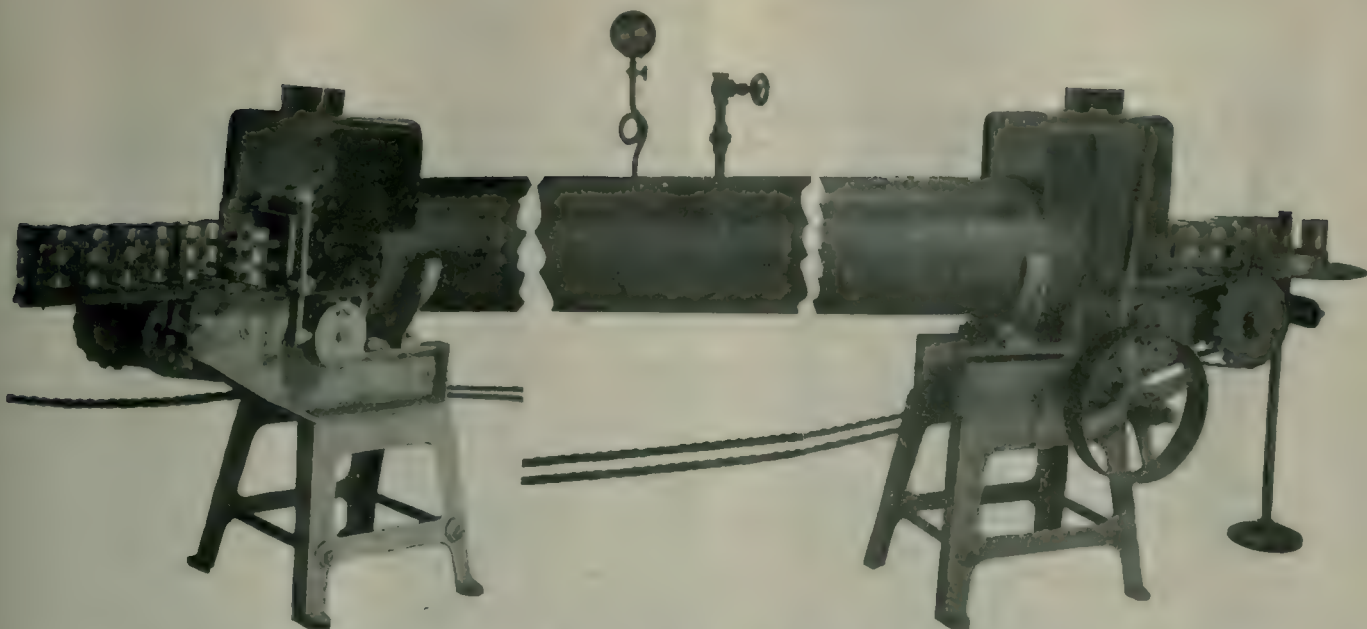
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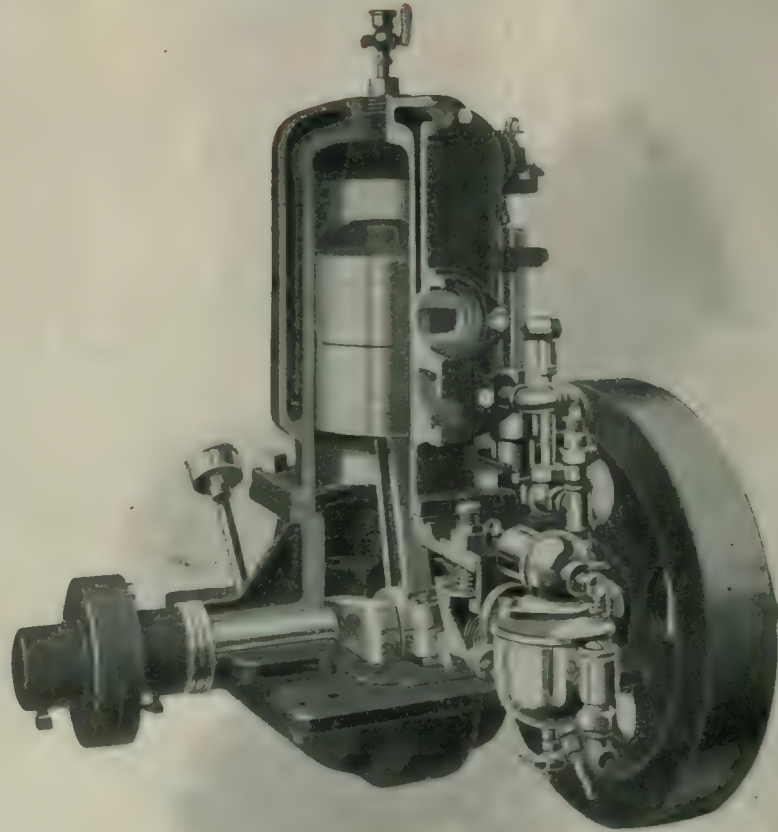
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VOL. VII.

GARDENVALE, P.Q., OCTOBER, 1920

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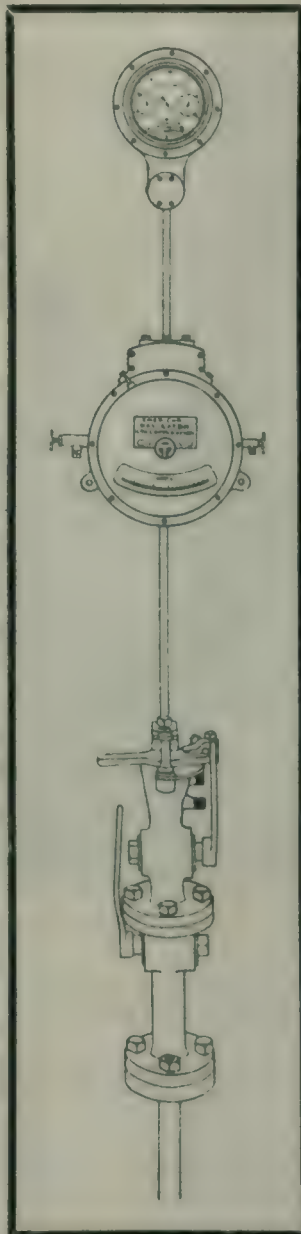
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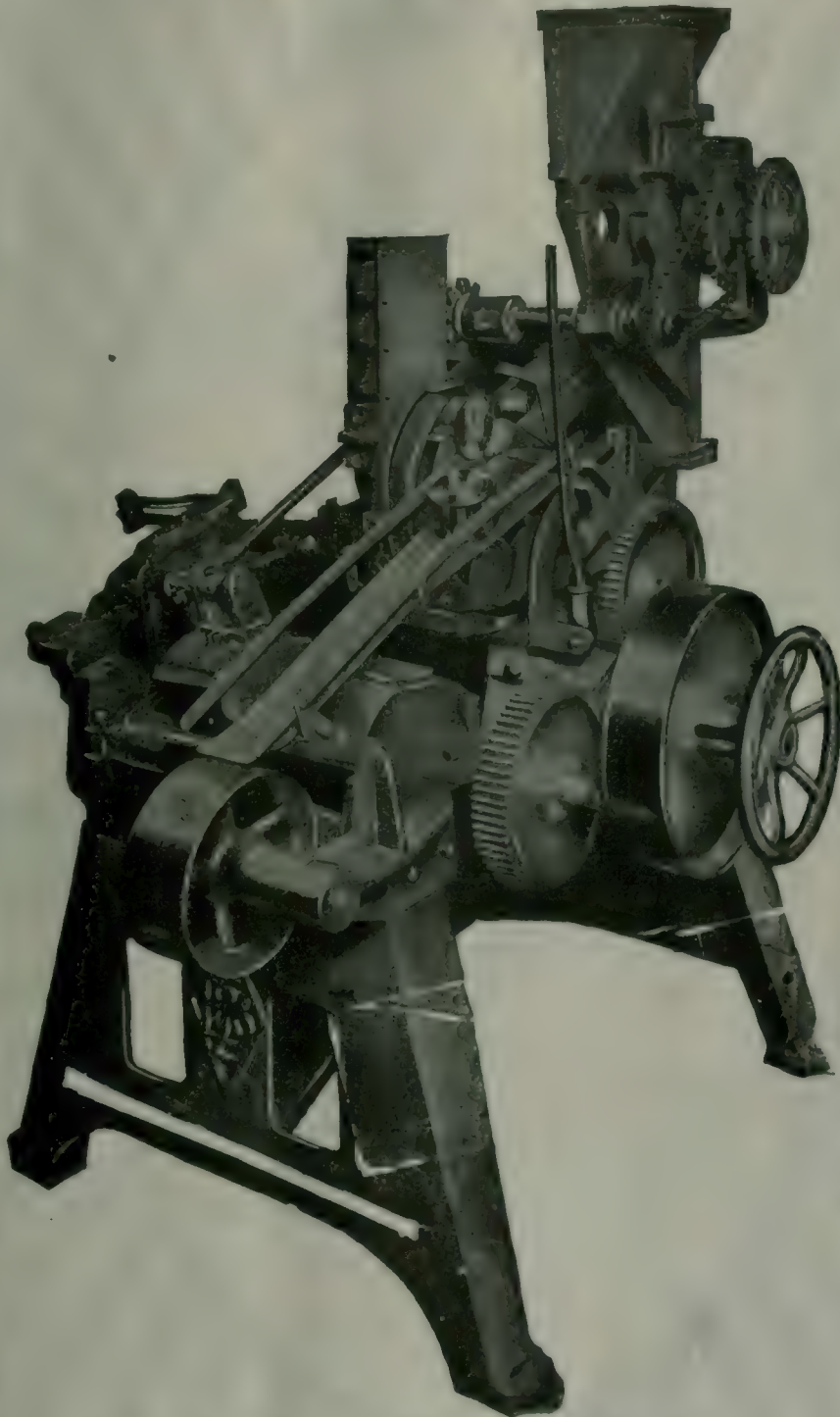
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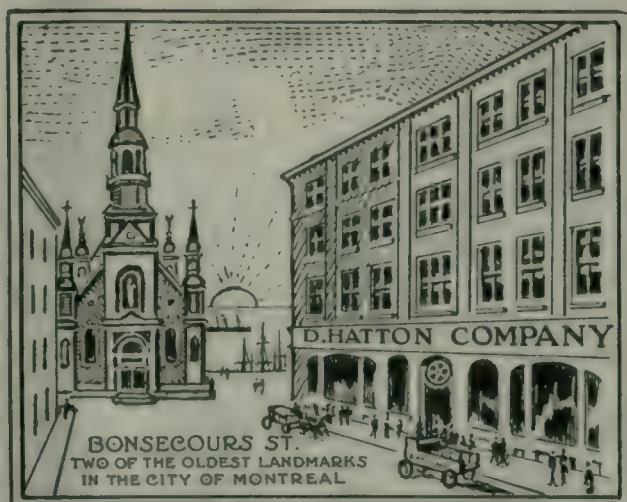
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We suggest for the Summer Season you place a standing order with us for your weekly supplies of **FISH**. We guarantee you quality and service. Here is a few of the lines we recommend.

FRESH:

Haddock, Codfish, Halibut, Salmon, Dore, Lake Trout, Whitefish, Pike.

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WHAT THE UNITED STATES THINKS OF "LION"

22 FURNESS WITHY BUILDING

PHONE SACKVILLE 540

DIVISION OF OPERATIONS

UNITED STATES SHIPPING BOARD EMERGENCY FLEET CORPORATION
HALIFAX, N. S.

OFFICE OF THE AGENT

WHEN ANSWERING
REFER TO FILE.....

April 26th., 1920.

FROM: C. S. Nye, District Agent,
United States Shipping Board,
Halifax, N. S.

TO: R. L. Graham, Esq., Manager,
Consumers Cordage Co., Ltd.,
Dartmouth, N. S.

SUBJECT: - Towing hawser supplied S.S. 'Lake Ellithorpe'

Dear Sir:

Complying with your request relative to the test given the 15" towing hawser you supplied us for the purpose of towing our S.S. 'Lake Ellithorpe' from Halifax to Portland, it is with much pleasure that I submit to you the following facts.

The S.S. 'Lake Ellithorpe' while en route from Fowey, England to Portland, Maine with a cargo of twenty-eight hundred tons of China clay, became totally disabled by the loss of her propellor, on March 7th., during a heavy gale thirty miles south-west of Sable Island and after a very hard struggle, during which time she very nearly stranded on the bars of Sable Island, she was successfully picked up by and towed to Halifax by the Furness Liner 'Maplemore' arriving in Halifax, Friday, March 12th.

On the arrival of the 'Lake Ellithorpe' at Halifax, it was found that in order to install a new propellor, it would be necessary to discharge her cargo in order to place her in drydock, as the construction of the ship and the nature of her cargo would not permit her being safely tipped to install the new wheel and it was therefore decided, in order to save time and enormous expense in discharging and reloading the cargo, to tow the 'Lake Ellithorpe' to her destination, Portland, Maine.

The S. S. 'Eastside' owned by the United States Shipping Board, arrived in Halifax on March 16th, and instructions promptly given the Eastside to tow the 'Lake Ellithorpe' to Portland.

UNITED STATES SHIPPING BOARD "BRAND" ROPE

23 FURNESS WITHY BUILDING

PHONE BACVILLE 347

DIVISION OF OPERATIONS

UNITED STATES SHIPPING BOARD EMERGENCY FLEET CORPORATION

HALIFAX, N. S.

OFFICE OF THE AGENT

WHEN ANSWERING
REFER TO FILE _____

April 26th., 1920.

E. L. Graham, Esq., Manager,

Subject: Towing Hawser.

2 -

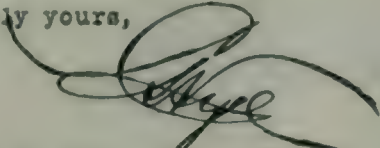
As neither the 'Eastside' or the 'Lake Ellithorpe' had the proper towing equipment, it was decided by the Masters of both these ships that in order to insure the safety of both ships in undertaking the tow, that a 15" hawser should be supplied and it was therefore ordered from your Company and as I understand turned out and delivered in record time aboard S.S. 'Lake Ellithorpe' approximately twenty-nine hours from the time the order was given.

The instructions for the 'Eastside' to tow the 'Lake Ellithorpe' to Portland were revoked however, and the 'Eastside' proceeded on her voyage to New York, but on the arrival of the Shipping Board S.S. 'Western Comet' at this port on March 28th., instructions were given to the 'Western Comet' to tow the 'Lake Ellithorpe' to Portland.

The 'Western Comet' after completing necessary minor repairs at this Port, left Halifax with the 'Lake Ellithorpe' in tow at 3.30 P.M. Wednesday, March 31st., the weather conditions being ideal at that time and the tow arrived at Portland Lightship, at the entrance of Portland Harbour at 6 P. M. Friday April 2nd., which I believe is very near record run for a tow of this kind, having completed the voyage from Halifax to Portland in approximately fifty hours.

There can be no doubt as to the excellent quality of the material used in manufacturing this hawser and it was pronounced by both the Masters of the 'Western Comet' and 'Lake Ellithorpe' as being one of the finest pieces of rope they had ever seen and I sincerely trust it will prove of much valuable service for towing purposes in the future.

Very truly yours,



CSN/S.

C. S. Nye,
DISTRICT AGENT.



The Fisheries of Nova Scotia

Nova Scotia's Enormous Fishery Resources

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Fish and Fish Products

- and -

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The attention of dealers who receive their fresh fish from Portland and other foreign sources is directed to the exceptional opportunities of obtaining their supply from the **Bale des Chaleurs** and the **North Shore of the St. Lawrence**, to their own advantage and that of their customers, and to the benefit of the fishermen of the Province of Quebec.

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HALIBUT, SALMON, HERRING,
CODFISH, ETC.**



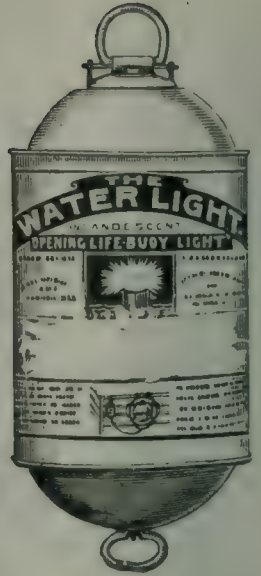
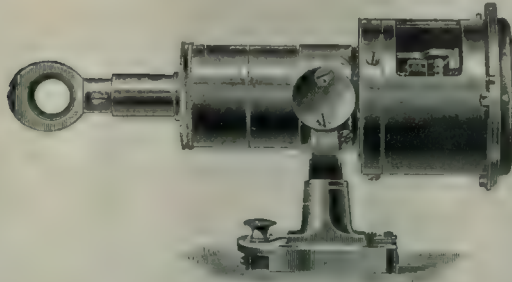
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A Monthly Journal devoted to the Commercial Development of the Fishery Resources of Canada, and the Technical Education of those engaged in the Industry.

SUBSCRIPTION:

Canada, Newfoundland and Great Britain	\$1.00
United States and Elsewhere	\$1.50

payable in advance

Published on the 24th of each month. Changes of advertisements should be in the publisher's hands ten days before that date. Cuts should be sent by mail, not by express. Readers are cordially invited to send to the Editor items of Fishery news, also articles on subjects of practical interest. If suitable for publication these will be paid for at our regular rate.

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Today Canada demands increased production. More goods, an ever-increasing supply—and quality must be maintained with the increase of quantity. The old craftsman often took years to perform the task that the skilled mechanic now accomplishes in a day.

Machinery has done this and today The Canadian Fairbanks-Morse Co. Limited are making it possible for the artisan to do the work of the master-craftsman at lightning speed. For quality of product, quality of tools is necessary. The workman does the job, but the machine assures mechanical precision—all those details which insure a product satisfactory in its last analysis.

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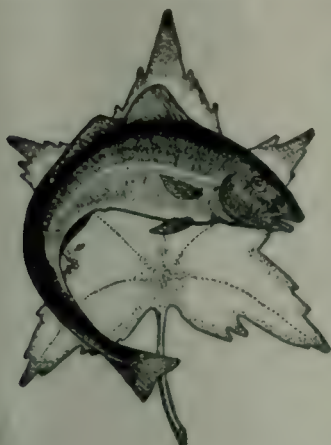
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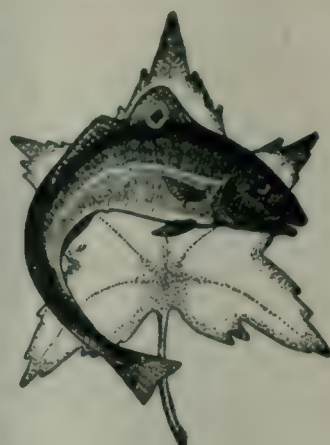
AUTOMOTIVE EQUIPMENT



EDITORIAL



FREDERICK WILLIAM WALLACE
Editor



NATIONAL FISH DAY.

The annual National Fish Day inaugurated in 1915 by Vice-President J. A. Paulhus of the Canadian Fisheries Association will be maintained by the Association's Publicity Committee and a plan of campaign is being discussed.

The last National Fish Day was held on November 11th 1919, but many dealers think that the date is not the best for the fish trade as many centers make a holiday of the day to celebrate the ending of the Great War and stores are closed.

The date for the 1920 National Fish Day has not yet been decided but the Secretary of the C. F. A., at present in Great Britain, will study British fish publicity and propaganda methods and possibly apply some of them to the next National Fish Day.

It is the intention of the Association to pull off the event before the close of the year and the date will probably be around mid-December.

"HOW LONG, O LORD, HOW LONG?"

If our conception of what is meant by wasted money is the general conception, it is hard to understand how the government can countenance the deliberate doling out of \$160,000 year after year to Atlantic fishermen in paltry amounts, to serve absolutely no legitimate purpose. When the fishing industry is literally starving for assistance in other quarters it seems nothing short of scandalous that such wanton waste should continue unchecked. In this enlightened age public money should not be expended to continue any established precedent merely because of the precedent or its political significance. In a private business enterprise results are expected where money is spent. In other words full value is received. Is there any reason that this principle should be departed from because the money expended is public property?

Away back in 1877 the Halifax Fisheries Commission decided that the government at Washington should pay the sum of \$5,500,000 in lieu of certain privileges granted her fishermen operating in northern waters. Of this amount Newfoundland received \$1,500,000 and eastern Canadian provinces maintained that the \$4,000,000 awarded by the Halifax Commission belonged to them because of their direct interest in the fisheries concerned. Their view did not carry, however

Ottawa decided that the money was the property of the people as a whole.

The discussion see-sawed for the next three or four years until finally the government of the day, at the approach of a general election, granted a sum of \$150,000 annually for distribution among Atlantic fishermen, ostensibly for the purpose of encouraging building and fitting out of improved fishing vessels. In 1891 the grant was increased by \$10,000 and since that year Atlantic fishermen have received an annual bounty distribution of \$160,000.

The ludicrous side of the situation is exposed when the actual payments to fishermen are analysed. Taking departmental report that the payment to vessel owners the fiscal year 1916-17 as an example, it is noted from the department report that the payment to vessel owners did not exceed in any one instance \$80, boats owners were donated \$1 apiece; vessel fishermen received the munificent sum of \$6.45 each, and boat fishermen were presented with the sum of \$4.10 each. And mind you the payment in each individual case, accordingly to the original grant, was "to encourage the building and fitting out of improved fishing vessels" and otherwise promote better conditions. We can appreciate just how much of the money was applied as intended and if so, how far it went.

In reality the original grant was the purchase of political support. The profit accruing to the fishing industry generally by the expenditure of such an amount was not a matter of consideration. The recipients of the bounty have regarded and still regard it as easy money and use it accordingly. While the sin of the government of that day was reprehensible in its commission, the present administration at Ottawa must be held equally culpable for its sin of omission—its neglect to correct a mistake of long standing.

It is not suggested that fishermen should be deprived of the use of the grant, but it is insisted that the money should be judiciously spent. Why not employ the amount to assist fishermen in installing motors in their boats. In England a similar system has met with tremendous success. There are many ways in which it could be applied to help the industry but, that the fishermen may not have occasion for complaint that the bonus is being taken from them, let it be spent to

serve them directly in some such project as suggested above.

God knows our fisheries administration at Ottawa is skimmed for money. But for heaven's sake let it spend what money it has available to serve the best interests of the industry.

PRINCE RUPERTS CAR SHORTAGE

Railway Commission hears evidence and speedy readjustment is hoped for.

It is with deep interest that we note that the Railway Commission sat in Prince Rupert, B. C. recently and heard evidence regarding the fish car shortage. We can guess the nature of evidence submitted because the editor has accumulated data on the same subject for many months past and is familiar with actual conditions. Each month there has been a shortage of from twenty to thirty fish cars. This means that from two hundred to three hundred tons of fish which could be marketed profitably have been withheld from the consumer. Not only has Prince Rupert suffered by this loss of trade but the public generally has had its fish supply seriously curtailed. The ambitious little British Columbia town has fared badly of late and in justice to its people and to the fishing industry generally it is hoped the railway commission will speed the construction of the necessary railway equipment to adequately handle the trade.

OUR SCIENTIST WORK.

Unusual interest centred upon the annual convention of the American Fisheries Society which was held at Ottawa the latter part of September. Despite the fact that the organization has completed fifty years of existence, never before did its members convene on Canadian soil. The government, through the Fisheries Department, acted as the host and the proceedings throughout were marked by the utmost cordiality. International deliberations of this character are deserving of the greatest encouragement. The interchange of ideas and opinions makes for the general improvement of all, and, which is of infinite importance, a greater sympathy is bred for the views and feelings of others, provincial ideals are discarded, and international affiliations are strengthened.

There were many excellent papers read and the exchange of views should be profitable to those concerned with the scientific phase of the fishing industry. Of greater general interest, however, was the move to bring into closer association the commercial and scientific interests. The question was discussed at the business meetings and repeatedly introduced. W. A. Found, assistant deputy minister of fisheries at Ottawa, went into the subject at length when addressing the visitors at a banquet in Chateau Laurier, and A. H. Brittain, past president of the Canadian Fisheries Association, dwelt upon the point on the same occasion.

And it is undoubtedly true that the two interests should co-operate more closely. In the final analysis scientific investigations and researches are conducted for no other purpose than to improve the industry commercially, whether the immediate aim be to conserve certain species, to remove destroying elements, to learn the anatomical structure of a fish or acquire information as to its habits. The scientific group may be likened to the laboratory staff in the Westinghouse plant or some other industrial organization. It is a unit of the general system, and an essential unit. But it is just as ridiculous to suggest that the scientist and

and the practical fishermen should go about their business regardless of what the other is doing as it is to suggest that the laboratory of the Westinghouse plant be removed to Honolulu and that the main plant and the laboratory continue as two separate institutions.

What is required today is practical co-operation between the two interests. The same organization could be effected as maintains in an industrial plant. The practical fisherman and the commercial interests have many problems which they want solved and these are the ones which the 'laboratory staff' should be at work on. Our present loose arrangement leaves the problem to be studied largely to the selection of the scientist and its practical importance may be very small.

Mr Found touched upon a few of these practical problems at the banquet in the Chateau. He pointed out that about twelve millions of dollars are being wasted annually in the fishing industry in offal. The Council of Scientific and Industrial Research estimates a loss of \$10,000,000 in waste and \$2,000,000 in oil. Is it not possible to avoid this loss? Is it not a practical problem for the scientist to devise some means of preserving fish offal from putrefaction until it could be accumulated at a central reduction plant; or to locate some inexpensive arrangement for reducing offal locally?

The prevailing system of icing fish to preserve it in transit to interior markets, is not satisfactory, Mr Found declared. Would it not be of infinite value to the industry if some superior process could be brought forward? Is this not a practical problem for the scientist?

Then consider the multitude of problems upon the shoulders of the actual fisherman. Is he able to locate his fish by any logical process? It's guess work. But surely where all things in nature respond to fixed laws, the fish of the sea must move about in some order or system. Is it not possible to find just why certain fish go certain places at certain times, and is it not possible, knowing conditions, to foretell where good fishing may be found?

These are some concrete examples of what would prove profitable and suggest a means whereby scientific effort may be more definitely directed to supplement the commercial end of the game.

WONDERFUL FISHERY FILMS.

The Fisheries Department, through its recently organized Publicity and Marketing Division, has secured a wonderful collection of moving picture and still photographs of many branches of the fishing industry in the maritime provinces, which will provide splendid ammunition for propaganda work.

Messrs E. M. Finn and B. J. Bach, expert camera men with the Department of Trade and Commerce, spent the entire summer in the east and took in the entire coast of the maritime provinces from the Restigouche River to Halifax. They secured excellent sport pictures in northern New Brunswick and "shot" some exceptionally fine films of the industry generally. A tuna fishing picture, taken about Chester and Hubbard's, N. S. will be screened in Canada very soon.

Altogether the 15,000 or more feet of exposed film and the three hundred or more negatives comprise one of the best collections of fishery pictorial data in existence. The work reflects credit upon the photographers and also upon the Fisheries Department

under whose direction they worked. It is understood the pictures are to be circulated broadcast throughout the world. Infinite good should accrue from this method of advertising the Canadian industry and fish dealers supplying foreign markets should not be slow to take advantage of the assistance the department is furnishing. The films will be educating to our own people as well as outsiders.

DIRECT FOREIGN TRADE

The advisability of supplying our foreign markets with fish direct seems to be pretty generally appreciated but the obstacles in the way of developing a direct trade are manifold. First and foremost comes that old bogey-custom. What foolish things we do and what ridiculous practices we maintain just because they have been the methods followed by previous generations. In a good many instances our good judgement takes second place to our respect for custom or precedent. Why not let common sense prevail? There is always an attraction to the course of least resistance, but it is not always the wisest or most profitable.

Why is it that such a large proportion of Canadian fish exported is shipped through an American port and handled by American brokers? In days gone by it may have been properly maintained that better transportation facilities could be secured via New York. But conditions have changed today. Steamers operating from Canadian ports connect with all the important markets and if they are not already equipped with refrigerated space to accommodate this fish and other perishable traffic, it will be but a very short until they are. So, hence forward, all conditions being equal, routing via a Canadian port is both good business and consistent patriotism.

But a more serious obstacle than this rooted custom seems to be the matter of inspection of good before they are accepted. The broker acting in New York or Chicago, according to the prevailing system, passes upon the quality of the goods. Inspection, therefore, seems essential for the protection of both the buyer and the seller. Some exporters assert that no matter what

inducements are offered otherwise the present system cannot be superseded until government standardization and inspection of all canned and cured fish are made compulsory. If for no other reason than to develop direct trade compulsory government inspection is to be desired.

Men who stand prominently in the forefront in the industry are the strongest advocates of government inspection. The export of carelessly cured and carelessly packed products, advertised to the world as Canadian production, is a handicap to the trade generally and until the possibility of exporting such products is eliminated Canada will not be put on a fair competitive basis with other fish producing countries. Despite immediate hardships and unpleasanties involved, compulsory inspection will ultimately make for prosperity because each and every parcel of fish then exported will bear the stamp which means that the Dominion government stands behind the article. Newfoundland has caught the idea in its new regulations governing the curing, packing and grading of fish.

As in a good many other instances, Canada will wake up when her competitors have got the upper hand. The war has given Canada a sentimental advantage but the preference is not being properly worked. How many prizefighters have lost in the crucial test because of over-confidence. In the matter of trade as in everything else, we should keep ourselves in good condition. Meet our competitors at every turn. Leave nothing to chance.

STUDIES LOBSTER AND SCALLOP

Andrew Hackett, naturalist, Fisheries Branch, Department of Marine and Fisheries, has returned to Ottawa after spending the major portion of the summer months around Bay Chaleur and Anticosti Island continuing his study on the life history of the lobster. He made observations at many points and accumulated some interesting biological data. From the north shore of New Brunswick he went to Lunenburg county, N.S., when he made a brief investigation into the condition of the scallop fishery.

Why Not Vary Your Fish Menu?

At this season especially, you have an unusually wide variety of fish from which to select. For to-morrow, why not try something new? We'll gladly suggest many lines. Let us explain our standing order plan?

DELICIOUS FRESH HERRINGS—PLOWNDERS—SMELTS FOR FRYING—CHICKEN LOBSTERS—HALIBUT STEAKS—FRESH WHITEFISH—DORE—PORTLAND HADDOCK
VEGETABLES—ALL

Big Catch of Haddock at Boston

Thousands of Finest Haddocks ever received arriving by express. On sale at
lb. 7½c

AN ARGUMENT AGAINST DUTY-FREE FISH.

Herewith are re-produced two advertisements of two aggressive and up-to-date fish dealers in a large Canadian city. One mentions "haddock from Portland" and the other is boosting "haddock from Boston". Canadian fish producers could flood the Canadian markets with haddock, but evidently fish from Boston and Portland is given preference over fish from Canso, Hawkesbury, Lockport, Halifax and other Canadian points.





Scientific Research at McGill University



Every University has three great functions to perform if it is to fulfill its proper duty in a community. These are:—

- (a) The Dissemination of Knowledge (in Teaching).
- (b) The Preservation of Knowledge (in Libraries and Museums).
- (c) The Advancement of Knowledge (by Research and Discovery).

The last mentioned task, that of adding and increasing the fund of human knowledge, is, in many ways, the highest function that a really great university can perform, for the world can advance only by having at its command an ever increasing field of knowledge, which is power and which makes for progress.

For the opening up of new fields of knowledge, we are dependent chiefly on the universities of the world. In this great work, McGill University has occupied a foremost place among the universities of the Dominion. From the days of Sir William Dawson to the present time, there have always been members of the staff engaged in important scientific researches at McGill, and a continuous series of papers setting forth the discoveries made in these researches have been issued from the University. A general reference only can here be made to a few of these investigations.

The Department of Physics at McGill University from the time of its foundation, has attracted the attention of the whole scientific world through a series of brilliant researches carried out in the Macdonald Physics Building by a succession of distinguished men of science who have occupied the Professorships in this department — researches which have advanced our whole knowledge and conception of the constitution of matter and the laws of the Universe.

Of these men Professor (now Sir Ernest) Rutherford is worthy of a foremost place. His investigations in the field of Radioactivity were of a character so striking and so far reaching, that they opened up a new world of scientific knowledge, and at the completion of nine years of continuous work at McGill University, and having refused in succession the appointment of the headship of the Department of Physics of nine of the foremost universities of the United States, he was called to the head of the Department of Physics in the University of Manchester as a stepping stone to the Professorship of Physics in the University of Cambridge, which he now holds and which is recognized as the leading professorship in this department of science in the English speaking world. He attracted to McGill a band of younger men whom he associated with him in his work, and many of whom have since achieved marked distinction, among whom may be mentioned Dr. Soddy, now at the University of Oxford, Professor Eve, now head of the Department of Physics at McGill University, who rendered such excellent service during the war in the invention of methods for submarine detection, and Professor Louis Vessot King of the same department, whose recent work on Fog Signalling in the Gulf of St. Lawrence has attracted such widespread

attention, also Professor Boyle, now at the University of Alberta, Professor McClung, now at the University of Manitoba, and many others who flocked to the laboratories of McGill Universities, not only from the United States and Britain, but from Germany and other parts of the Continent of Europe, to study with him.

Other men of marked distinction have carried out researches in this Department at McGill in other lines of work. Professor Calendar in the accurate measurement of high temperatures, Professor Barnes on the properties of ice and the conditions preventing its formation, researches which have a very direct and practical bearing on many Canadian problems. The names of Professor Cox and of Dr. (now President) Tory should also here be mentioned, as well as those of Dr. A. N. Shaw, Dr. J. A. Gray, whose excellent work in sounding ranging during the war is well known, and other younger men in the McGill Department of Physics now engaged in research work of importance and who promise to carry on in a worthy manner the traditions of old McGill.

In the Department of Electrical Engineering, which in many ways is related to the Department of Physics, the researches of Professors Herdt and Dalemont, as well as those of Brig.-General Andrew MacNaughton and Mr. E. Bieler may be mentioned.

The extended researches of Dr. T. Sterry Hunt and Dr. B. J. Harrington into the mineral resources of Canada first drew attention to the Chemical Laboratories of McGill University, and since their time there has issued from these laboratories a continuous series of contributions to chemical science. Dr. Ruttan and his staff of twenty-one chemists, including many able young investigators, are now engaged, in addition to their teaching duties, in carrying out researches on various recondite problems, a chemical science which is the foundation stone of great fields of modern industry.

In the Natural Sciences, McGill has also occupied a foremost place in the world of research. Professors Penhallow and Lloyd in Botany, Professor Arthur Willey, F.R.S., and Dr. Stafford in Zoology, have made most important contributions to the knowledge of their respective sciences. In Geology, the work of Sir William Dawson covered many fields and is well known to all, that of Dr. Frank D. Adams, his successor, in the Logan Chair of Geology, on the ancient crystalline rocks of Canada, on the problems of metamorphism, the origin of ore deposits, and more recently on the elasticity of rocks, (with Dr. Bancroft), and their deformation and flow under great pressures, has thrown light upon many fundamental questions concerning the earth and its past history, and has received widespread recognition on both continents.

In various branches of Engineering, McGill has also made important original contributions to the fundamental principles of the respective sciences. Among these may be mentioned the researches of Professor Nicholson into the conditions which obtain within the

cylinders of a steam engine when in operation, the work of Professors Porter and Durley on Canadian coals and the most efficient methods of their utilization, that of Dr. Coker, now Professor of Mechanical Engineering in University College, London, on action of metals under stress, and that of Professors Mackay and Brown, and Mr. Batho, on the deformation of bridge members under stress, may be especially mentioned.

The work of Dr. Stansfield on the Electric Furnace and its adaptation to industrial needs is well known.

In the Faculty of Medicine the name of Sir William Osler stands out pre-eminent among the many men who have made important contributions to the great science and art of healing at McGill. His name, in fact, occupies a foremost place among the great physicians of the world, and his great text-book of Medicine is a classic wherever medicine is taught.

In the newly established Faculty of Agriculture, important researches have been carried out by Prin-

cipal Harrison and members of the staff at Macdonald College, an institution which, in the future, even more than in the past, will follow along lines of agricultural research and investigation looking to the solution of many of the pressing problems with which Canadian agriculture is now face to face.

In addition to its labors in research and teaching, the staff of McGill University have contributed to the development of the Dominion of Canada itself by their services on many Government Commissions and Boards, such as the Commission of Conservation, the Council for Scientific and Industrial Research, Civil Service Commission, various War Boards, etc.

It is hoped that the appeal which McGill University is now making to the public for increased endowments will meet with a generous response, thus enabling the Governors of the University to provide the means necessary for the continuation of the excellent work which McGill has been doing and which redounds in a large measure to the credit of the whole Dominion.

The Pan-Pacific Scientific Conference

The first Pan-Pacific Scientific Conference was held in Honolulu, August 2, 1920. This Conference was called by the Pan-Pacific Union and invitations were sent out to various institutions in all countries bordering on the Pacific to send representatives. In response, four delegates were sent from Japan, four from the Philippines, six from Australia, two from New Zealand and one from Canada, besides many from the mainland of the United States and from the Hawaiian islands. Captain Potts of Trinity College, Cambridge, who was with Dr. Mayor of the Carnegie Institution on an expedition to Samoa, also attended the Conference. In all there were over 100 delegates of which about 40 were from the Hawaiian islands. Besides these 40 delegates many others attended meetings and otherwise took part in the proceedings.

The Conference was called for a three-fold purpose: First, to take stock of the work that has been done in the various sciences, in and around the Pacific; Second, to come to some definite conclusions as to which of the more pressing problems can be attacked with the greatest likelihood of early success and Third, to consider in what ways the greatest cooperation can be secured, in Pacific investigation, in order that duplication of effort may be avoided.

The preliminary work in arranging for the Conference was carried out by a committee of which Dr. H. E. Gregory, Director of the Bishop Museum, Honolulu, and Professor of Geology, Yale University, was Chairman. To him much of the success was due.

For the consideration of general topics the Conference met in one body, but as several sciences were represented, the Conference was divided into sections for the discussion of more special matters. There were seven of these sections, as follows: 1. Anthropology, 2. Zoology, 3. Botany, 4. Entomology, 5. Geography, including Geodesy, Topography, Physical Oceanography, Meteorology and Terrestrial Magnetism, 6. Geology and 7. Seismology and Volcanology. The general sessions were held in the Throne Room of the Royal Palace (now the Capital), and meetings of sections in the Library of Hawaii, in the Mission Memorial building and in the University Club. The Senate

Chamber was used as an office for registration, information, etc.

As the University Club put its building at the disposal of the Congress, this place became the general rendezvous during the whole period of the Congress. Most of the delegates met here for luncheon and each day a speaker was provided to give a talk during the luncheon hour. Several of these speakers were members of the Congress and other members spoke at various Club and Association meetings held in other parts of the city.

No attempt will be made to cover the ground taken up in all the discussion or even those of special interest to members of the C.F.A. but it might be worth while to give an outline of the procedure, day by day, in order that some idea of the magnitude of the Conference may be obtained (and incidentally the royal manner in which the Congress was entertained). It may be understood that the afternoons were taken up with meetings of sections (referred to later) unless there is statement to the contrary.

Conference Procedure:

Monday, Aug. 2, 9 a.m. Opening of Congress, Presiding Officer, Dr. H. E. Gregory.

Addresses of welcome:

Hon. C. J. McCarthy, Governor of Hawaii;

Hon. George R. Carter, Ex-Governor of Hawaii;

Dr. A. L. Dean, President of the University of Hawaii;

Dr. H. P. Agee, Director Experiment Station Staff, Hawaiian Sugar Planters' Association;

Mr. A. F. Judd, President Board of Trustees, Bishop Museum.

Addresses on "Salient features of Science of Hawaii" by representatives of the different sciences.

At this meeting the organization for the Conference was completed. Dr. H. E. Gregory was elected Chairman and Dr. A. L. Dean, Vice-Chairman and Secretary.

Tuesday, Aug. 3, 9 a.m. Discussion. Ocean Currents and their significance. Presiding Officer, Dr. C. McLean Fraser, Biological Station, Nanaimo, B.C.

8 p.m. Complimentary Smoker given by the Univer-

sity Club. Lecture. "Hawaiian Trails and Mountains", Dr. V. MacCaughy, Superintendent of Public Instruction, Hawaii.

Wednesday, Aug. 4, 8 a.m. to 6 p.m. Excursion. In motor cars to Nuuanu Pali. Back to the city and out through sugar and pineapple plantations to Heleliwa on the north coast. Addresses at various points of interest on the way. Cavalry review at Schofield Barracks. Visit to the sugar mill in operation on the Waialua plantation. Return to Honolulu around the coast by rail.—Courtesy of the Oahu Railway and Land Company.

Thursday, Aug. 5, 9 a.m. Discussion.—The origin of the Hawaiian Fauna and Flora. Presiding Officer, Dr. J. A. Cushman, Boston Society of Natural History.

4-6 p.m. Reception by the Trustees of the Bishop Museum, at the Museum Buildings.

8 p.m. Lecture. Mapping of lands and charting of seas, Dr. W. Bowie, U.S. Coast and Geodetic Survey, Washington.

Friday, Aug. 6, 9 a.m. Discussion.—Race relations in the Pacific. Presiding Officer, Dr. F. Wood-Jones, Professor of Anatomy, University of South Australia, Adelaide.

6.30 p.m. Dinner given by Governor McCarthy at the Moana Hotel.

Saturday, Aug. 7, 9 a.m. Discussion.—Relation of Ocean Currents to Organisms. Presiding Officer, Dr. L. A. Cotton, Professor of Geology, University of Sydney, N.S.W.

3 p.m. Left Honolulu for the island of Hawaii on Steamer Mauna Kea.

Sunday, Aug. 8, 7.30 a.m. Arrived at Hilo.

8 a.m. to 1 p.m. Excursion by rail northwestward along the coast of Hawaii, through the sugar plantations, and return to Hilo. Compliments of the Hawaiian Consolidates Railroad. Lunch at Tilo. By motor car to Volcano House at the rim of the Kilauea crater.

7 p.m. By motor car to Haleamaumau, the "House of Everlasting Fire", a crater within the large crater of Kilauea.

Monday, Aug. 9, 8 a.m. to 1 p.m. By motor to Haleamaumau and other points of volcanic interest.

2 p.m. Discussion.—Volcanism in the Pacific. Presiding Officer, Dr. L. H. Daingerfield, Meteorologist, U.S. Weather Bureau, Honolulu.

Tuesday, Aug. 10, 8 a.m. to 1 p.m. Two excursions, the one to the flowing lava of Kilauea and the other to the bird forests.

2 p.m. Discussion.—Seismology in the Pacific. Presiding Officer, Dr. E. C. Andrews, Geological Survey, New South Wales.

Wednesday, Aug. 11, 7.30 a.m. to 5 p.m. Excursion by motor car from the Volcano House around the south end of the island of Hawaii to Napoopoo on the west coast. Items of greatest interest, lava flows and coffee plantations.

7 p.m. On board the steamer "Kilauea" for the night. Dinner, bed and breakfast. Compliments of the Inter-Island Transportation Company.

Thursday, Aug. 12, 6 a.m. Ashore from the "Kilauea". Motor trip to old City of Refuge, then northward along the west coast of the island to Kailua.

12 m. On board the "Kilauea" for Honolulu.

Friday, Aug. 13, 5.30 a.m. Reached Honolulu. No general session. 1.30 p.m. to 8 p.m. Motor and walking excursion to Mt. Tantalus.

Saturday, Aug. 14, 9 a.m. Discussion.—The Frame-

work of the Pacific. Presiding Officer, Dr. T. W. Vaughan, Geologist, U.S. Geological Survey.

6.30 p.m. Chowder Supper by the Pacific Club at the home of John Guild, Kaalawai.

Monday, Aug. 16, 9 a.m. Discussion.—Mapping the Pacific. Presiding Officer, Dr. J. A. Thompson, Director, Dominion Museum, Wellington, N.Z.

4 p.m. to 6 p.m. Reception by University of Hawaii on the University Campus.

Tuesday, Aug. 17, 9 a.m. Presentation by sections of programmes for research. Presiding Officer, Dr. E. D. Merrill, Director Philippine Bureau of Science, Manila.

8 p.m. Lecture. Coral Reefs in the Pacific. Dr. A. G. Mayor, Carnegie Institution.

Wednesday, Aug. 18, 9 a.m. Discussion.—Training of Scientists for Pacific work. Presiding Officer, Dr. N. Yamasaki, Professor of Geography, Imperial University, Tokio.

7 p.m. Hawaiian Dinner. Compliments of the Country Club.

Thursday, Aug. 19, 9 a.m. Discussion.—Means and Methods of Cooperation. Presiding Officer, Dr. C. A. Sussmiltch, Director School of Technology, Newcastle, N.S.W.

8 p.m. Lecture. Nature and Man in the Philippines. Dr. E. D. Merrill.

Friday, Aug. 20, 9 a.m. Discussion. Resolutions bearing on problems for research. Presiding Officer, Dr. A. L. Dean, President of the University of Hawaii.

7 p.m. Conference Dinner. Courtesy Country Club.

For each of these discussions on general topics, several individuals (enough to occupy the greater part of the time available) were asked to take part in the discussion. After each address, or in some cases only after all the addresses on the subject were given, the topic was thrown open to general discussion, hence it was possible to get not only a general expression but also a great variety of viewpoints on every question considered.

In the consideration of these general questions it was unfortunate that there was a Canadian representative in only one of the sciences but this was much more noticeable when the Conference was meeting in sections, since at times there were questions of vital importance to the Pacific Coast of Canada being discussed in all or nearly all of the sections at the same time and it was physically as well as mentally impossible for one individual to attend all these meetings. In some cases joint meetings of two or more sections were held to discuss matters of common interest and this helped out somewhat.

It follows, therefore, that this report, as far as section discussions are concerned, must be confined largely to zoology. In any case this will include most of that which would be most interesting to members of the C.F.A.

The Section of Zoology was one of the largest of the sections. Dr. Charles Chilton, Professor of Biology, Canterbury College, Christchurch, N.Z., presided. The discussions in the section were entirely informal. A subject for discussion was set for each meeting and every one who wished (which usually included almost everyone) came prepared to take part. There were no set papers read. Each one spoke from the standpoint of his own work, experience and interests and asked questions to become familiar with the viewpoint of others. Of course all the zoologists present were not primarily interested in fisheries but few subjects discussed had no bearing on fisheries problems. Among

those who were especially interested in these problems might be mentioned Dr. H. F. Moore, Deputy Commissioner of Fisheries, Washington, Dr. B. Evermann, Director California Academy of Sciences, San Francisco, Dr. K. Kishinouye, Professor of Zoology, Imperial University, Tokio, and Dr. C. H. Edmonson, Professor of Zoology, University of Hawaii, Honolulu.

The gist of the discussion in the interest of the fisheries was embodied in the resolutions concerning marine zoology that were presented by the sections of Zoology, Botany and Entomology to the general conference where they were adopted. The subjects for discussion pertained to value, distribution and conservation of the fisheries, the facilities at the Biological Stations, Museums, etc., in which work on Pacific material forms an important part and the interrelationships between zoology and other sciences as far as Pacific problems are concerned.

The resolutions are as follows:

Whereas, The necessity for conservation of natural resources has become imperative, since, in the case of the Pacific Ocean, certain economic marine species have been exterminated and others are in peril of extinction or grave depletion, and

Whereas, Measures for such conservation must be based on exact knowledge of the life-histories of marine organisms, and

Whereas, Knowledge of the Biological, physical and chemical phenomena of the Pacific ocean is meagre and wholly inadequate to serve as the basis for rational conservation, therefore be it resolved

1. That the Conference recommends that the Governments of the several countries bordering on the Pacific ocean cooperate, through their several agencies concerned in surveying and charting the sea, toward the collection, compilation and publication of data relating to the topography of the bottom, and the temperatures, salinities, acidities, currents and other physical and chemical properties of the waters of this ocean, fundamental to biological research and the improvement and conservation of the fisheries.

2. That the Conference recommends that the Governments of the several countries bordering on the Pacific ocean enter upon a comprehensive, systematic, biological survey of the Pacific ocean and its contained islands, with special reference to the economic fisheries problems and that the investigation be carried on, insofar as possible, through existing agencies, such agencies to be provided with the additional apparatus and facilities necessary, such investigation to be carried on under such cooperation as will prevent duplication of effort.

3. That the Conference recommends that the several museums, biological stations and other institutions engaged in biological investigations relating to the Pacific ocean, associate themselves for the purpose of exchanging information, concerning past, current and proposed investigations, the exchange of facilities and personnel, the coordination of work and prevention of duplication in their respective activities. It is further recommended that a survey be made of the facilities afforded by the several institutions, both as respects material, equipment and environment and the personal qualifications of the respective staffs for supplying special information and working up material. It is further recommended that the National Research Council of Washington, D.C., be invited to undertake or arrange for such a survey and that a committee of

this Conference be appointed to represent the interests of the botanical and zoological sections in this regard.

4. That the Conference recommends to the several Governments that systematic statistics of the fisheries be collected and published annually and that such statistics be, as far as possible, uniform in character and in such detail as to methods of fishing and geographical distribution as to make them useful in fisheries administration and conservation. It is further recommended that the several Governments provide for a joint commission for the arrangement of the details of such statistical compilations.

In connection with the second resolution concerning a biological survey, different members of the section are preparing short reports as to the possibilities of advancing the work along certain lines or in certain areas. Attention will here be called to the suitability of the coast of British Columbia and the area over the adjacent continental shelf for readily extending such a biological survey. These reports are being prepared for the large volume of proceedings.

There will be two volumes of these proceedings, the first, to be got out as expeditiously as possible, to include only the outline of the work done at the Conference, with the resolutions submitted and adopted; the second, a much larger volume, will go much more fully into the detailed discussion of the various projects, much of the material for which remained to be written when the Congress adjourned. The second volume will consequently not appear for some time.

The Congress, although it consisted of members from several countries bordering on the Pacific, was not official. That is to say, no Government was asked to participate or send representatives. The members of the Congress felt that it would be desirable to have the efforts toward cooperation initiated at the Congress continued in a manner that could be most satisfactorily adopted by an official international organization. As several countries that should be interested were not represented, an inclusive project could not well be provided for but a committee, consisting of one member from each of the countries represented, was left in charge of the situation, to see if it could be possible to get the Governments of these countries as well as those of all others bordering on the Pacific, to support such an organization, which thus could become a permanent one. Until such an organization is formed or an attempt is made to form it, the Bishop Museum of Honolulu has consented to be the repository and clearing house for material and data arising out of the work of the Congress.

Although the general Conference closed on Friday, August 20, that did not finish the fisheries programme. On Monday, August 23, Dr. Moore, Dr. Evermann and the C. F. A. representatives were guests of the Hawaiian Fish and Game Commission, of which the Executive Officer is Mr. H. L. Kelly, an old friend for many years connected with the U. S. Bureau of Fisheries.

Leaving the hotel before 7 a.m. to make an early start on the Japanese sampan (The Japanese do the commercial fishing in the Hawaiian islands), an opportunity to see the methods employed in catching bonito out in the open ocean was afforded. At 4 p.m. a landing was made at Kaneohe bay on the east side of Oahu and after two hours' motor trip, Honolulu was reached. After dinner at the Country Club where the Commission and others interested in the

fisheries acted as hosts, there was an interesting round table discussion of the Fisheries situation in the Hawaiian islands.

Such a report as this gives a bald outline of the Conference programme but it cannot give any idea of the inspiration each delegate received from the personal contact for at least three weeks with such a fine body of men and women working untiringly in the interest of science, with little or no thought of self or personal gain. Even to those affected the value could not be appreciated at the time. It is only as time shows it up in perspective that the realization of the benefits gradually makes itself felt. Men, so noted in their particular fields of work that one always mentioned their names with awe, were found to be the best of good fellows and on acquaintance, the best of friends. As Governor McCarthy, speaking, the night of the dinner given by him at the Moana Hotel, said, "We were rather fearful as to what we should do with Congress when it came to Honolulu as we were not familiar with 'highbrows' but now that we have met you and got acquainted with you we have found such jolly good fellows that we hope you will come often and stay long."

Then there is the other side of the picture. The reputation of Hawaiian hospitality is world-wide but surely the usual Hawaiian hospitality was outdone on this occasion. The programme as outlined gives an idea of the set entertainments but it gives no idea of the dinners, teas, receptions and entertainment of all kinds, for many or for few, for the members of the Congress as well as for the ladies of the party, that in endless succession, were provided. One felt that he was the personal guest of all Honolulu, as some one was looking after his welfare and his entertainment all of the time.

The ladies of Honolulu, the Governor and other public officials, the Staff and the Board of Trustees of the Bishop Museum, the Faculty of the University of Hawaii and the staffs of all the other scientific institutions in the islands may be mentioned but only as examples. They merely typified the city or the whole Hawaiian islands for that matter.

It is little wonder then that when the "Matsonia" pulled away from the dock at 10 o'clock on the morning of August 25, with several of the Congress members on board, almost smothered with leis, placed in position by friends left behind, that it was not the wonderful spur that the Congress had given to the Advancement of Science in the Pacific that was uppermost in the minds of the departing delegates. It seemed impossible to realize that only a few days had elapsed since on landing in Honolulu one scarcely saw, or expected to see, a familiar face, until now on looking over the great throng one could recognize scores of faces of those who were now included in the list of dear friends. As the faces became indistinct in the distance and as the weird, plaintive notes of the Hawaiian band grew fainter and died away, for the time being, the gladness had departed and there was only the sadness left in that soulful word of greeting, "Aloha".

The Department of Game and Fisheries has this year made a greater effort than ever before to increase the fish stock in Ontario waters. Three times more spawn than in previous years have been placed in the lakes and rivers.

DEPARTMENT OF MARINE AND FISHERIES NOTES ON SEA FISHING RESULTS FOR AUGUST.

The catch of sea fish of all kinds for the month of August on both the Atlantic and Pacific coasts amounted to 1,005,884 cwts., against 1,145,290 cwts. for the same month last year. The total value of the August catch at the point of landing was \$3,647,137 against \$4,506,143 last year.

The smaller catch of this year is due to a large drop in the aggregate landings of cod, haddock, hake and pollock on the Atlantic coast. The catch of these fish in August of this year amounted to 260,800 cwts. against 498,754 cwts.

There was a shortage of bait in many sections of the coast and fishermen in some places gave their attention to getting in the hay crop. The chief causes of the diminished catch of cod, haddock, etc., were, however, lower prices and a less active demand which resulted in the curtailment of fishing operations.

Compared with the same month last year, the herring catch was greater by 34,000 cwts. The mackerel catch was slightly greater also.

While the catch of sardines in the Bay of Fundy district was not more than half that of August last year, the quantity packed in Canada during the month this year was 14,000 against 8,000 cases.

Since the sixteenth of the month lobster fishing was carried on in part of Northumberland Strait and the catch to the end of August amounted to 12,360 cwts., against 8,450 cwts for the same period last year.

From the beginning of the packing season in March last to the end of August there have been packed 149,064 cases against 120,003 cwts. during the corresponding period in 1919.

On the Pacific coast there was an increase of 125,893 cwts. in the salmon catch. All three districts contributed to the increase.

The value, however, was very little greater than that of last year, because of the fact that almost three-fourths of the increased quantity consisted of the cheaper grades.

The halibut catch amounted to 28,689 cwts. against 31,116 cwts for August last year.

SALMON TRAP PIRATES IN ALASKA VERY DARING DURING PAST SEASON.

To steal fish from your traps and then have the thieves offer them to you at fishermen's prices the next morning was the experience of some of the trap owners in Alaska during the past season, according to reports that are just beginning to come down from the North.

The pirates operated with consummate nerve. They would approach the trap during the night "stick up" the watchman and proceed to remove the finny treasure from the trap by using a miniature seine. This they dropped into the filler and hauled out. Inside of ten minutes the pirates would have their boat loaded, and would then disappear in the darkness.

The odd part of it would happen if any were caught, which it was reported did happen, and then the authorities could not find a jury to convict the thieves.



The Knockabout Schooner

By COLIN McKAY.



The vogue of the large knockabout type of fishing schooner seems to be over. Shipyards in the Maritime Provinces which have for some years been busy building this type of craft are now idle, or facing the prospect of idleness, as there is little demand for fishing vessels of any kind. W. C. McKay and Son of Shelburne launched a knockabout schooner of 185 tons during the first week of September, and another of the same size and type, during the first week of October. These may be the last knockabout schooners to be built in Nova Scotia. At any rate the Nova Scotia fishermen are saying that this class of vessels have been a disappointment. Their principal fault is that they will not ride to anchor on the banks in a breeze of wind like the olden type of fishing vessels. A second fault is that they are slower than the older vessels in moderate winds. The experience of New England fishermen with the knockabout type has also been disappointing, and for the same reasons.

The knockabout type of schooners have an overhanging bow like a racing yacht, and bowsprit. When at anchor the send of the sea lifting against the long overhang of the bow evidently hurls them backward, causing them to draw their anchors or part their hawsers. Some fishermen say that the reason that they drag their anchors or break adrift is that they have no bobstays like the older types. Their idea being that the bobstay parts the sea. This explanation is hardly convincing. It is more easy to understand that a sea plunging against the bow of the knockabout takes a powerful grip on the whole forepart of her, especially as she has no fore-foot to help her lift to the on-coming sea. Then the knockabouts which have been built in Nova Scotia are larger, heavier vessels than the older types, and are in any case, less easy to hold. If they used heavier anchors and bigger hawsers they might ride out a breeze better, but the ordinary type of hawser is about the limit of size that can be conveniently handled and stowed in their narrow bows. They might possibly use chain cables, as the Frenchmen do, but the weight of a chain cable upon their overhanging bows might be a serious matter in a heavy sea. In any case Canadian fishermen do not believe in using chain cables on the banks, for reasons that experience has proven good.

The knockabouts fared badly in the great gale that swept the Grand Banks this summer. They were not, however, the only vessels that broke adrift. With few exceptions all the vessels, Canadian French and American, lying in the sixty mile wide path of the gale, lost their ground tackle. Many also lost rails, and had their decks swept clear of boats and gear. Fortunately the gale came at the tail-end of the season when most of the vessels had nearly completed their fares and were thinking of returning home. Had it occurred earlier the vessels would have lost a lot of time refitting, and missed the best weather for fishing. As it is, most of the Lunenburg Grand Bankers made good catches, but many lost gear worth \$3,500, and that will take the

profits off the summer's trip. After having such serious losses in the great gale, it may be imagined that the fishermen were not happy when they returned home to find that the bottom had apparently fallen out of the fish market.

To-day Lunenburg is rather down-hearted. There is now no talk of building fishing vessels. Nova Scotia yards have a few fishing vessels of the semi-knockabout type under construction which will be launched before winter sets in. There are also two or three fishing vessels, barques or schooners, under construction for the French Government. When these contracts are completed the prospects are that the building of fishing vessels will offer little employment for some time. Newfoundland by all accounts is more down-hearted than Lunenburg, and not likely to order fishing vessels—not more than a few anyway. Some hopes have been entertained of getting contracts for fishing vessels from South Africa, but one Nova Scotia builder turned out two very poor vessels for this market—they were so badly put together that they cost a mint of money for repairs in Bermuda and St. Thomas—and South Africa is evidently wary of coming to Canada for more fishing craft.

It would appear that Lunenburg, Riverport, and other fishing centres have been rather overdoing things. Having been making money for some years they have gone in for building fine big vessels—a more expensive class of vessel than normal conditions in the fishing industry warrants. Some of the vessels launched in recent years have been too big for salt fishing. Of course, the vessels when not engaged in fishing are usually employed in the coastin, West Indian or other trades, and during the war when there was plenty of employment for any kind of craft the larger they were the better. But while there will doubtless be in future some employment for small sailing vessels, when not engaged in fishing it is not likely to be so plentiful or so profitable as during the years of the war. The Canadian Government Merchant Marine has established new services to the West Indies and South America; the Marine Navigation Company and the Houston Lines are running boats from Canada to Brazil, Uruguay and Argentina; probably we will have regular steamship sailings to the Mediterranean, calling at ports in Spain and Portugal. And with such services the small Nova Scotia sailing vessels are likely to experience difficulty in finding employment when the fishing season is over.

At the same time the cost of fishing vessels has increased so much that it is more important than it ever was that they be kept at work the year round. Before the war the average type of Grand Banker with equipment cost about \$13,000 or \$15,000. The latest knockabout schooners of 180 tons, with equipment are valued at \$30,000 to \$35,000. In some cases new companies have over-capitalized their vessel property. While the fishing vessels were making big profits it was not a difficult matter for promoters to sell shares to fishermen and others at prices that were

...by the actual income days of 80 or 90 per cent. Apparently over, there is now no eager demand for shares in fishing vessels. Now that the industry is getting down to rock bottom conditions again, this inflation of values may correct itself—though it will continue to have the unfortunate effect of discouraging young fishermen from investing in vessel shares—but there is no likelihood that the cost of vessels or equipment will fall to the pre-war level. Nova Scotia builders before the war were turning out fishing vessels at less than their economic value. Few of them were making a profit, and all were paying low wages, and some were working a ten hour day. Now they are paying twice the wages they did some years ago, and working a shorter day; and material reduction of wages is out of the question with the cost of living what it is. Also the builders have to face greatly increased prices for all kinds of material. They make more use of machinery, but on the other hand pay heavy transportation charges on nearly everything they use. Little timber now comes down the river at the mouth of which the shipyards are located. Now timber is brought by rail long distances; sometimes pitch pine is brought from the southern states.

Lunenburg and other ports, owing Grand Bank fishing vessels, will do well to consider the new conditions which have developed or are in process of development—to take stock of their position and work out a policy for the future. Their further progress, their present security, depends on their ability to provide an answer to the important questions which are pressing to the fore front. All these new steam ship services—to what extent will they deprive fishing vessels of winter employment? Will it be possible to man the fishing fleet in summer if the men are no longer able to make trading voyages in winter? And supposing the steamers deprive the schooners of their occupation in winter, to what extent will it be profitable to use the schooners for fishing in winter?

That seems to be a question of some importance. And immediately it brings us broadside on to the great question which is worrying the Maritime fishing industry just now—the question of markets. Lunenburg and other salt fishing ports have some times been accused of lack of enterprise in not going in for winter fishing. It has also been suggested that the fishermen sailing out of Lunenburg—being usually shareholders as well as workers—did so well in summer that nothing would induce them to try the winter fishing with its hardships and dangers. This might very well be a matter of pride for Lunenburg but the fact that Lunenburg vessels have never found it difficult to get fishermen to go on trading voyages in winter might argue the existence of other reasons why Lunenburg has never gone in for winter fishing to any extent. One very good reason was that Lunenburg, having a big stock of salt fish on hand, and pre-occupied with the problem of disposing of its summer's catch, was not likely to be interested in winter fishing. Any Lunenburg fishermen who had a hankering for winter fishing went to Boston or Gloucester, where he knew the winter fishermen could find a profitable market. If he had been asked to go winter fishing out of Lunenburg he would probably have observed that he did not believe in carrying

coals to Newcastle. There is the rub. The greatest fishing port in Canada knows little or nothing of fresh fishing; it is little interested in the Canadian market. The greatest fishing port in Canada has no cold storage plant; Lunenburg fishing vessels have to go to other ports for frozen herring for bait. This is probably a poetic justice in this peculiar situation, but a discussion of the question, "Why Lunenburg hasn't a cold storage plant when Liverpool and Lockport have," might bring out some information of importance as to Dominion Fisheries policy in the Maritime Provinces.

FISH TRADE WITH BRAZIL.

As a result of communications between this Department of Fisheries and Mr. G. B. Johnson, Canadian Government Trade Commissioner, Rio de Janeiro, Brazil, interesting information has been brought forward which should be of value to Canadian exporters of fish who are anxious to develop and improve foreign markets.

The following extract from a recent letter received from Mr. Johnson, touches upon vital points:—

"This country (Brazil) is a great consumer of codfish, owing to the very high cost of fresh fish, which is not within the reach of the mass of the people, and the market for Canadian cod and other fish can, I believe, be greatly developed. A direct trade instead of through New York middlemen, quotations of c.i.f. prices, and the utmost care in curing, packing and in details in connection with shipping documents, are essential.

"Many inquiries have reached this office for Canadian fish during the past year, particularly since the inauguration of direct steamship service, and trade should develop if the connections initiated have developed into agreements.

"It seems to be the case, however, that numbers of Canadian firms who might be supposed to be interested in developing an export market, are somewhat indifferent."

As an example to demonstrate the injury which may be done to this market, by not complying with the instructions set forth, Mr. Johnson states that twice recently codfish sold by Canadian firms reached Brazil in bad condition, alleged to be due to inferior curing. The stigma falls not alone on cod but on all Canadian fish imported.

There would seem to be a demand in Brazil for not only codfish, but smoked and pickled herring, and all kinds of canned fish. As has been emphasized on more than one occasion, however, it is essential that the New York middleman be eliminated, and a direct trade developed.

He had been fishing, but with bad luck. On his way home he entered a fishmonger's shop and said to the dealer: "Just stand over there and throw me five of the biggest of those trout!"

"Throw 'em? What for?" asked the dealer, in amazement.

"I want to tell the family I caught 'em. I may be a poor fisherman, but I'm no liar."



The Oregon Fish Commission's Rearing Pond System



MR HENRY DOYLE.

Recently the Fish Commission of Oregon very kindly invited a number of those interested in the salmon fisheries of British Columbia, Alaska and Puget Sound, to inspect the Bonnierville hatchery. The object in view was to enable these visitors to learn from personal observation the superiority of the rearing pond system for the artificial propagation of Pacific salmon. The writer was one of the fortunate ones that enjoyed the hospitality of the Oregon authorities, and he has been asked to put in writing the impressions he received, and his opinion of what benefits the Columbia river hatchery has derived from the propagation methods now being employed by the state of Oregon.

Early Packing Conditions.

To properly appreciate the situation it is necessary to somewhat review the early history of the salmon canning industry on the Columbia river. Fishing on a commercial scale first began in 1866, with one cannery and a pack of 4,000 cases. It gradually increased until in 1888, 39 operating canneries put up 629,438 cases, practically all of which were of the chinook species. The records show that the run of fish has been consistently good from 1866 to 1876 inclusive: was quite poor in 1877; good in 1878 and 1879; exceptionally good in 1880; and good from 1881 to 1884. In 1885 the run was comparatively light, and from then on the fishery began to decline. It is practically from this time on that the packing of Fall Chinook, blueback, steelhead, and other species was undertaken; the earlier packs being composed almost, if not entirely, of Spring run Chinooks.

The strenuous fishing of these early days was bound to produce adverse effects. This is shown by the smaller packs subsequently obtained, and the reports concerned the depleted condition of the spawning beds. The decline affected both the number of canneries operated and the total quantities packed. By 1889 the pack of Spring Chinook has decreased to 266,697 cases—less than five per cent. of the average for 1880 to 1885—and only 21 canneries operated, compared to 39 in 1883. It reached its ebb in 1913 when fourteen operating canneries secured only 192,116 cases of the Chinook species.

The large packs secured in the early days of the industry were produced from the runs which frequented the upper Columbia watershed, notably those runs that entered the Snake, Spokane, and other tributaries east of the Cascade mountains. Records in the writer's possession demonstrate not only the condition of these early runs in their prime, but also show how depleted they subsequently became.

Fish Plentiful in Early Days.

Over 100 years ago, in the days when the fur traders first traversed the country, their reports show "it was not uncommon for the Shoshone Indians, while fishing salmon at the falls of Snake river,

to spear SEVERAL THOUSAND FISH IN THE COURSE OF ONE AFTERNOON, while all along the river the tents of the Indian fishers were erected when the run was at its height."

Capt. Chas. Wilkes, U.S.N., who explored the upper Columbia watershed in 1841, said immense numbers of salmon spawned in Kettle and Spokane rivers. Over 1,000 Indians were congregated at the latter river for the purpose of procuring the fish. In 1883, Mr. L. C. Gillian of Spokane, under date of 17th Sept., wrote:—"No salmon to speak of are running. The Indians, who are encamped here in great numbers anticipating a large run, are uneasy and fear the fish are not coming. Yesterday morning they caught eight, which was the largest number taken at any one time as yet. A white man living in this neighborhood told me that last year he made an estimate of the salmon taken by the Indians. He thinks they had between 40,000 and 50,000 drying at one time, about October 1st."

Depletion Becomes Evident.

Dr. B. W. Evermann in 1893 summarised the fishery conditions of part of the upper Columbia watershed. The following are taken from his report.

"Bruneau River was formerly an important stream for spawning salmon. A dam recently constructed in the Lower Bruneau now wholly prevents the ascent of fish."

"Boise River, like the Bruneau, was formerly a salmon stream, but is now partially or entirely closed by a dam near Caldwell, and is unsuitable by placer mining in the upper part of the stream."

"Up to 1885 the Yakima River was visited by three or four species of salmon, including the quinnat, in great numbers. Important spawning-beds were located in the bed of the stream; but in recent years but few salmon have made their appearance in this river. No artificial obstructions have been interposed, and the decline can hardly be due to any change in the character of the stream."

"Spokane River, below the falls, was formerly an important salmon stream containing large spawning-beds, but salmon are rarely seen there now."

"The Little Spokane was visited by salmon in great numbers in 1882 and previous years, but since 1882 the number has been very few."

"Colville River, below Meyers Falls, was formerly an important spawning-ground. Salmon still enter Colville River, but they are very rare."

"Kettle Falls, Columbia River. Up to 1878 salmon were very abundant in this part of the Columbia; 'millions were seen ascending the falls every season.' 'The run would begin in June and continue until October, the biggest run being in the last half of August. Since then there has been a great decrease. They have been scarce since 1882. Since 1890 there have been scarcely any at Kettle Falls. The Meyers

Brothers say that they have been almost unable to buy any salmon for their own table from the Indians for three years. Certain Indians with whom we talked at Kettle Falls said salmon were once very abundant there, but that very few are seen now. Other persons testified to the same effect. Essentially the same information was obtained regarding the decrease of salmon in other parts of the upper tributaries of the Columbia, viz., at Spokane, in both the Big and Little Spokane rivers, and in the Snake River and its various tributaries."

In 1902 Master Fish Warden Van Dusen reported as follows:—"In the early history of the fisheries, salmon were found in the head waters in marvellous abundance, while now there is no reason to doubt—indeed the fact is beyond question—that the number of salmon now reaching the head waters of streams in the Columbia river basin is insignificant in comparison with the number which some years ago annually visited and spawned in these waters. I find places where in years gone by salmon frequented for spawning purposes in abundance, that now rarely a salmon appears."

In 1904, the Washington State Fish Commissioner wrote concerning the State hatchery on the Little Spokane river:—"This plant is situated on the Little Spokane River, about ten miles from the city of Spokane, and was built in 1899. The plant has been a failure from the day it was built, and has only been used to hatch out the overplus from the Wenatchee and Kalama hatcheries. It has a capacity of two million fry." (About what 1500 adult salmon would furnish and fertilize). "It was not in operation during the present season and not enough spawn can be taken at this point to pay for operating the plant. I shall endeavor at the coming legislature to make some arrangement TO OPERATE IT AS A TROUT HATCHERY."

It is much to be deplored that when the legislature did meet they acceded to the Commissioners' wishes, and directed the hatchery should be utilized to increase the arch enemy of salmon life in a section where man had already reduced the nobler fish to such small numbers."

The Clackamas river received the main run of Chinook salmon in the lower Columbia spawning area. In 1885 Mr. L. T. Barin, writing to Mr. J. W. Cook, one of the pioneer cannery owners, says of the Clackamas:—"Of course the salmon are not as plentiful now as they were. for some years ago the river was literally alive with Chinook salmon; yet, while they are not very abundant now, if a rack should be put across the river early in the season, say February, there would be no doubt that more than enough salmon could be secured FOR HATCHING PURPOSES."

The foregoing should make plain to any impartial observer that.

(a) Chinook salmon undoubtedly were abundant on all the spawning beds of the Columbia river system in the early days of the industry.

(b) that on most of these beds they subsequently became depleted almost to the point of extermination, while in some instances complete extermination did occur; and,

(c) that this depletion synchronized with the decrease in size of the pack of canned salmon.

Releasing Artificially Propagated Salmon in the Fry Stage.

No one familiar with the progress that has been made in the artificial propagation of Pacific salmon, can doubt that some returns have been secured from the system employed in past years. This system had for its object the hatching of eggs in hatchery troughs, retaining the young fish therein until the egg sac is absorbed, and then releasing them in what is known as their "fry" stage to run the gauntlet of their numerous natural enemies; to experience the change from a fresh to a salt water environment; and to brave the perils of the deep sea. That favorable results have been obtained from this system is demonstrated by the Columbia itself, since the pack of Chinook salmon from the early nineties until 1915 came largely from the Clackamas river section—where hatchery operations were carried on—the upper Columbia watershed having become a negligible factor from overfishing, dams, and irrigation systems. But if all the commercial catch for that entire period be credited to the hatchery operations, and nothing whatever allowed for natural propagation, the return from fry plantings would not amount to one per cent.

Releasing Artificially Propagated Salmon in Their Fingerling Stage.

In 1910 was inaugurated the system of holding salmon in retaining ponds until they attained such size and vigor as would enable them to avoid their enemies, and more readily adapt themselves to the conditions under which they would live for the succeeding four years. This system, while new in its application to salmon propagation, had nevertheless long before been proved successful with trout. Under it the young fish, after the absorption of the egg sac, are held and fed until they attain the "fingerling" stage, and have grown to 4 or 5 inches in length. They are strong, healthy, and active when they start for the ocean; plenty of food and uniform feeding and rearing conditions have developed them equally; and the advantageous start thus given is evidenced by the fine even-sized fish when they return at maturity.

Comparison of Results Under Both Systems.

Artificial propagation under the old system had been used exclusively from 1877 to 1910. Unquestionably natural propagation was an important factor in maintaining what runs there were throughout that entire period. If, for the sake of argument, we admit the naturally spawned fish comprised an equal proportion of the runs SINCE 1910, we can take the actual pack figures as indicating a proper comparison of the results obtained from the two methods of artificial propagation, i.e., that by which salmon were released as fry, and that under which they were retained until their fingerling stage. Based on these premises we find that for the five years 1910 to 1914 inclusive, (when the old methods prevailed), the average annual pack of Chinook salmon was 265,000 cases. For the five years 1915 to 1919 inclusive, (under the new system), the average annual pack of the same species was 400,000 cases. This shows a fifty per cent. increase was secured under the retaining pond system.

Doubtless mistakes were made in developing the new system. Rotation of foods, overcrowding of retaining ponds, regulation of water supply, neglect and in-

difference of caretakers, and many other causes must have materially and adversely affected operations at the commencement. But even allowing for all such tribulations the returns secured have shown remarkable results.

That the Oregon authorities have profited from experience is demonstrated by the pack results for the present season. Final figures are not yet obtainable but it is stated that the canned pack of Chinook salmon will exceed 600,000 cases, while what fish were mild cured, frozen, or shipped fresh, would equal 100,000 cases additional. The 1920 pack will therefore show an increase over the average for 1910-1914 of approximately 165 per cent.

It is apparent that Chinook salmon held in rearing ponds during their first summer do not return until four years elapse, thus making them five years old at maturity. It is assumed that the naturally propagated salmon of this species matures in four years, although such has not yet been definitely proven. It may be true as regards runs to certain tributaries of the Columbia, but this vast watershed doubtless contains runs of fish that differ in age of maturing as greatly as sockeye salmon are known to do in sockeye localities.

Some authorities argue that the retaining pond system only results in one year's delay in securing the return of artificially propagated salmon, and therefore needless maintenance expense is incurred without any compensating advantages.

That this contention is erroneous is demonstrated by the fact that carefully compiled statistics as to the weight of individual salmon covering the years 1869 to 1892 inclusive, show the naturally propagated Chinook salmon of these years averaged 25 lbs. weight per fish. Actual figures taken for the present season's run show an average of 32 pounds weight per fish, or practically 33 1-3 per cent. increase. No one will doubt that this increased weight alone will fully compensate for the additional cost involved through rearing Chinook salmon by the new method.

But, as pointed out above, the pack secured in 1920 shows an increase of 165 per cent. over the average for the last five years under the former system of propagation. If we deduct from this the percentage of weight increase, as shown in the preceding paragraph we will still have over 120 per cent. increase to account for. In other words we can admit that about twenty per cent. of the 165 per cent. increase is due to an increase in weight of the individual fish, and yet claim the retaining pond system shows 120 per cent. superior results to the fry releasing system.

A One Acre Pond Holds a Million of Fish.

With their present knowledge of feeding and caring for the young salmon the Oregon authorities seem confident 25 per cent. of the fingerlings they release will return as mature fish, while they would not be surprised if a return exceeding 50 per cent. is secured. Taking the lower percentage as a basis means that for each million fingerling salmon released sufficient adult fish will return to fill more than 100,000 cases. Retaining ponds of one acre area are amply sufficient for a million young Chinook salmon. Ten acres would provide pond capacity for ten million fingerlings, and from this number a pack of 1,000,000 cases should be obtainable. In the vicinity

of Bonneville hatchery alone ten acres of ponds could be constructed, while in countless other localities adjacent to Columbia river waters still greater pond capacity is available.

If the states of Oregon and Washington set themselves to do it, I think, without doubt there would be fish available in six or seven years time to produce an annual pack on Columbia river that alone would equal the 6,500,000 cases which the entire Pacific Coast pack of 1920 is estimated to be.

Results Obtained With Sockeye.

The Oregon authorities have also retained other species of salmon, and trout, with equally gratifying results. In 1914 they obtained sockeye eggs from Alaska; held the resultant fry in retaining ponds until 1916; and in 1918 obtained a large return of matured sockeyes, which were undoubtedly the progeny of the Alaskan stock. In 1919 they again secured sockeye eggs from Alaska, and to-day have over 2,600,000 active young sockeyes in the retaining ponds where they purpose holding them until next year. The return of these sockeyes as matured fish can be looked for in 1923.

It would appear that even better results can be expected in sockeye propagation than with Chinook salmon. Sockeyes are easier fed and cared for, and almost double the number can be retained in each rearing pond. As fry plantings of sockeyes, although continued for 34 years past, have produced almost negligible results, it is most important that the new system be established at once in all sockeye spawning areas. If this is done under the management and supervision of trained hatchery men, familiar with the retaining pond methods, there is every reason to expect the sockeye runs of the Pacific Coast can in a few years be built up to proportions which will dwarf into insignificance anything obtained under natural propagation conditions in the past.

Constructing Retaining Ponds Not Expensive.

The opinion seems very prevalent that the building of retaining ponds is an expensive undertaking, and that suitable locations are scarce in the vicinity of most sockeye spawning areas. This is an erroneous impression. The cost is comparatively small since all that is required is the erection of an earthen dam, and the diversion of a portion of the stream to a new channel—not exceeding ten feet wide or over three feet in depth—which generally would lie parallel to the main stream bed. No matter how turbulent the river pathways may be most salmon spawning beds are in streams which flow through comparatively level ground, that is to say, comparatively level for that portion made use of by the salmon when spawning. Generally the land bordering these streams will permit of retaining ponds being established in the immediate vicinity of the natural spawning beds, but in any case a suitable location will always be found close enough to answer the purpose.

Suitable food, and sufficient of it, constitutes the main item of expense, and next to this is cost of labor. In neither food or labor should cheapness be a consideration, since finer, larger and sturdier fish will result from the most nutritious diet; while cheap labor in this work means inefficient labor, and more young fish can be lost through inefficiency than from any other cause.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

DR. C. McLEAN FRASER NOW PROFESSOR OF ZOOLOGY AT UNIVERSITY OF BRITISH COLUMBIA.

With the opening of the University of British Columbia for the present year, Dr. C. McLean Fraser assumed his new duties as Professor of Zoology. Dr. Fraser will continue to act in an advisory capacity to the Biological station of the Dominion Government at Departure Bay, Vancouver Island, where he was formerly in charge. The Doctor has taken great interest in fisheries work, and is on the committee of the Vancouver Branch of the Canadian Fisheries Association, which has under consideration the establishment of a college of fisheries. This matter is still under consideration by the association, and just as soon as conditions in the fishing industry warrant there is no doubt that a college will be established. Several valuable papers of interest have been contributed to the "Canadian Fisherman" in the past by Dr. Fraser, and we hope to see more at an early date.

MEN PROMINENT IN THE FISHERY INDUSTRY OF THE UNITED STATES RETURN FROM INSPECTION OF ALASKAN FISHERIES.

Mr. Henry O'Malley, Pacific Coast Field Agent for the U. S. Bureau of Fisheries, and Dr. C. H. Gilbert, have returned from a summer's survey of the Yukon River fisheries. This report will be watched for with interest, especially as coming from men so well qualified to make a report on such a survey.

ASSISTANT INSPECTOR MOTHERWELL BEREAVED.

The sympathy of the entire fishing industry went out to Maj. J. A. Motherwell, Assistant Inspector of Fisheries, upon the loss of his wife, who died Oct. 10th, in the Royal Columbia Hospital after a short illness. An added touch to the sad event is the fact that there are three small children to mourn the loss of their mother. The funeral was held from the family residence in New Westminster, on Wednesday, Oct. 13th. Besides many personal friends of the family, many members of the Canadian Fisheries Association, of which Maj. Motherwell is a member, members of the British Columbia Association and others engaged in the fishing industry were present at the funeral ceremonies.

FISH GET PAST PURSE SEINERS THIS FALL.

A peculiar thing in connection with the fishing this Fall was the fact that although there was only a limited amount of gear in the water after Fall salmon, the catch was not what it should have been. This was owing to the bad weather, and the extremely high water which enabled the fish to get by the seines. This applies to cohoes and chums alike. The results are that the spawning grounds will be very heavily seeded with eggs.

LARGE CATCH OF WHITE SPRINGS ON THE FRASER THIS FALL.

The fisherman have had some good catches of white springs on the Fraser River this Fall. The result is that a considerable quantity has been frozen, and this will be used later by the different smoked fish firms to turn into that delicious kippered salmon which everybody likes so well. Seattle benefitted to a great extent from these catches, as a lot of this fish went there for the smoked fish firms.

FISHERIES DEPARTMENT TO EMPLOY AIRPLANES FOR PATROL DUTY NEXT SEASON.

Now that the Canada Air Board has established a seaplane station at Jericho Beach near Vancouver, the Fisheries department plan to make use of the high flying boats in connection with patrol operations during the salmon fishing season. The station was established too late this season, but Col. Cunningham, Chief Inspector for the Dominion Fisheries Department states that without doubt arrangements will be made to put the scheme into effect next season.

Already the new station has one seaplane in operation, and this has made several flights in connection with operations of different departments of the government.

By using a flying boat the fisheries department can save both time and expense, and as the flying range of the boats will easily take in Prince Rupert on the North it can be seen what a wide range of territory a boat can cover, and as the observer will have a range of eight to thirty miles when using a strong glass, it will be hard for poachers or others to get away once they are sighted.

RAILWAY COMMISSION HEARS FISHERY INTERESTS IN BRITISH COLUMBIA REGARDING EXPRESS RATES.

On Wednesday, October 6th, the Railway Commission, consisting of Chief Commissioner, Hon. F. B. Carvell, and Deputy Chief Commissioner, Hon. P. W. Nantell, heard the fishing interests of Prince Rupert, who entered a strong protest against the proposed increase in the express rates, and also took up other matters in connection with express shipments affecting their shipping facilities.

The commission sat in Vancouver on Tuesday, October 12th, and the Fishing interests of the Vancouver district were heard. Mr. J. S. Eckman, of the Canadian Fishing Co., Ltd., assisted by Mr. Douglas Armour, presented the shippers side of the case. Members of the industry interested in the question were present at the hearing.

Mr. JOHN LECKIE GOES TO VANCOUVER.

Mr. John Leckie, one of Toronto's oldest business men, who up to about eight years ago was connected with the marine hardware business of John Leckie, Limited, Toronto, has left for Vancouver where he will in future reside. Born in Glasgow, Mr. Leckie arrived in Toronto in 1857. His first store was on Colborne Street where he conducted a dry goods business. As the years went by he began to specialize in fishing nets and twine products, till finally his house was one of the largest wholesale firms in that line in the Dominion. In 1894 he extended his business and established a branch of his Toronto house in Vancouver under the management of his sons. There, with the growth of the salmon industry the Vancouver end of the business expanded until it was larger than the Toronto head office. It is worthy of mention that Mr. Leckie is the oldest living customer of the Dominion Bank, he having deposited his account there during the first hour of the first day that the bank did business.

THE U. K. REMOVES RESTRICTIONS ON THE SALE OF CANNED SALMON.

Word was received in Vancouver on Oct. 14th by the canned salmon interests that all restrictions, except as regards sockeyes, on the sale of canned salmon in the United Kingdom has been removed by the British Government. One of the most important items in the removal of the restrictions was that in regard to grading, as this is also done away with. Although the restrictions were not removed as to sockeye, at the same time the price restriction has been raised from ninety three to one hundred thirteen shillings, and it is understood that on half pound flats it is somewhat higher.

Hon. F. C. Wade, Agent General for British Columbia in London, wires that the firms handling canned salmon in the United Kingdom are highly pleased.

This news will without doubt create a much better feeling among the packers than they have had for some time past. As long as the control prices were in effect, and the grading rule was enforced, the market as regards the United Kingdom was in a very unsatisfactory state. This should help to clear the way for the moving of a large part of the pink pack, as well as the better grades.

TRAWLER JAMES CARRUTHERS GOES ASHORE. FOUR MEN REPORTED LOST.

On October 14th, word was received by your Vancouver Correspondent that the trawler James Carruthers was ashore on White Sand Island. Four men were reported lost, and the balance of the crew were safe aboard the United States Geographical Survey steamer Surveyor. The James Carruthers is reported as resting easily on a bar, and the damage to the hull is not thought to be extensive. The trawler left Prince Rupert on Tuesday the 12th, and was driven before a severe storm. She is now only about 40 miles from Prince Rupert.

The James Carruthers is one of the fleet of steamers belonging to the Canadian Fish & Cold Storage Co., Ltd., of Prince Rupert, and was brought out from England eight years ago. She is 160 feet long, and carries a crew of 20 men.

J. W. Nicholls, Comptroller of Company received a wireless from the Surveyor of the disaster on Wednesday the 13th.

The steamers W. R. Lord, and George Foster of the same company are standing by.

CANADIANS TAKING GREAT INTEREST IN RESULTS OBTAINED FROM THE RETAINING PONDS AT BONNEVILLE OREGON.

During the latter part of September, Mr. Henry Doyle Vice Pres. Northern B. C. Fisheries Ltd., and Mr. F. E. Burke, Mgr. Wallace Fisheries Ltd., and Chairman of the Vancouver Branch of the C. F. A. in company with F. M. Warren, of the Warren Packing Co., of Portland, Ore., Mr. Frank Wright President of the Association of Pacific Fisheries, and Mr. F. P. Kendall, Northwestern Manager of the American Can. Company, visited the Bonneville Hatchery of the Oregon Fish Commission. The visit was made upon the invitation of R. E. Clanton, State Fish Commissioner of Oregon. The party were enabled to see the results obtained from the transplanting of the several million of eggs of Alaskan Sockeyes; which had been hatched and were being retained in the rearing ponds of the commission. It is the intention to hold these fry until 1921, when they will be released. The party also saw the millions of spring salmon fry which were being held in rearing ponds until they reached the fingerling stage, when they also would be released.

In an article by Mr. Henry Doyle, in this same issue of the *Canadian Fisherman* very interesting information is given regarding results obtained from rearing ponds in connection with hatcheries.

This international interchange of information in connection with salmon hatcheries is surely bound to bring valuable returns, and it is to be hoped such cordial relations between the different fishery departments, and those engaged in the industry will greatly assist in the development of the different methods of propagation of salmon.

HOLLAND-AMERIKA LINE TO MAKE VANCOUVER THEIR PACIFIC COAST TERMINAL.

Canned salmon was shipped direct to Holland on one of the Holland-Amerika Line steamers recently. This line maintains a service between Europe and the East and West Coast of South America. The S.S. Eemdyk of this line was the first steamer to arrive, and is being handled by C. Gardner Johnson & Co., agents for the Line.

CLOSED SEASON FOR LING COD IN SOUTHERN, BRITISH COLUMBIA.

For the past ten years the writer has heard the discussion as to the advisability of having a closed season for ling cod in Southern British Columbia waters. Although the Japanese fishermen have been bringing live cod into the Vancouver and Victoria markets for years there has been no definite steps taken to insure that nothing but cod in the prime of condition should be placed upon the market. The result has been that the fish have been brought in during every season of the year, and tons of fish have been marketed that should never have been allowed to be sold. Aside from their having been kept in a boat until they died of starvation and disease, they should never have been caught when they were.

The department has made certain regulations as to the holding of live fish in boats within certain limits of the harbors, but nothing has been done to eliminate net fishing for cod during certain periods.

Through representations made by the Canadian Fisheries Association and after consultations with the local fisheries officials, recommendations have been made to the department at Ottawa that there be a closed season for the catching of ling cod in Southern British Columbia Waters from Jan. 15th to March 15th inclusive in each year. It is hoped the department will take action regarding the above so that these regulations will go into effect for the coming year.

CHUM SALMON BEING BOOSTED BY UNITED STATES PACKERS.

The writer has always insisted that Chum salmon could be marketed in Canada as well as in other countries, and that it simply needed the right kind of publicity to place this variety of canned salmon on the Canadian market with success. Many recipes for the use of canned salmon may be applied to the chum variety with gratifying results and this fact is taken advantage of by one of the large United States Packers in a little booklet which they have published for the wholesalers and in which they call special attention to the fact that chum salmon may be used in the same recipes that the high grade salmon are used in. Even the wholesalers are placing the advantages of the lower priced salmon before the public in an attractive manner. Even in Vancouver where it has always been contended the lower grades of salmon would not sell, it has been found during the past few months that the buying public are right out after the lower priced goods, and have cleaned up every lot put on sale. A good time to start is when the going is good, and it was never better than when the people are looking for reasonably priced food that is good food, and pinks and chums are both good food.

FRASER RIVER SHOWS A VERY GOOD YEAR FOR AN OFF YEAR.

The following figures are interesting as comparisons of the sockeye packs for the past few years on the Fraser River, and this in taking into consideration the fact that the run of salmon reaching all the natural spawning grounds is larger than for many years :

1916.	Year before big run.	27,394 cases.
1917.	Year of big run.	123,614 cases.
1918.		16,849 cases.
1919.		29,628 cases.
1920.	Year before big run, is due.	36,477 cases

packed up to August 25th.

LARGE HALIBUT STEAMERS HAVE NOT FISHED OUT OF VANCOUVER THIS PAST SUMMER.

When the Canadian Fishing Company tied up their large halibut steamers at the time of the seamen's strike in British Columbia the men were told that they would stay tied up. This has been the case, and the Company have been buying independent halibut ever since, and to date have been very well satisfied with the trips they have received. By purchasing independent halibut at their Vancouver plant, it has encouraged Seattle as well as Canadian independent fishermen to put into Vancouver and unload their catches. This has resulted in Vancouver receiving the usual benefits of such calls, as purchases of supplies are always made at ports where catches are sold. Every endeavor is made by the Company to treat the fishermen right, and the result has been that the American schooners have come into Vancouver in preference to going to Seattle, even when prices have been equal.

TROLLING SPOONS FOR SALMON.

The Super-Diamond Trolling Spoon catches the fish. When the fisherman buys his spoons for trolling, he wants to be sure he has one that will have the right motion in the water, and with plenty of reflections which will give every appearance of a herring. This means right construction, hooks and swivels of highest quality, and both mounted on a highly polished spoon. The embossed diamond is the feature of the Super-Diamond Trolling Spoon. It adds strength and reflecting angles which other spoons do not have. The entire spoon is built to catch and hold the salmon on the West Coast of Vancouver Island where the fishing is the hardest kind of work or off North Island where it is equally as hard. Try the Super-Diamond Trolling Spoon and you will not ask for any better.

UPPER LAKE SECTION OF FRASER BASIN WELL SEEDED WITH SOCKEYE EGGS.

In his preliminary to Hon. Wm. Sloan, Provincial Commissioner of Fisheries, Deputy Commissioner, John P. Babcock, states that more sockeye salmon passed through Hell's Gate, in the Fraser River Canyon above Yale this year than in any one of the last five lean years.

Mr. Babcock quotes Fishery Overseer Scott, who was detailed to observe conditions in the Fraser River Canyon throughout the season as reporting as follows: "The number of sockeye that passed through Hell's Gate was as great as in the last big year 1917."

The number that reached the Shuswap and Chilco Lakes was greater than in any recent lean year, and compared favorably with the number that passed up the Thompson and Chilcotin rivers in the last big year, 1917, and the number that reached the Birkenhead is far greater than it has been in the last ten years, states Mr. Babcock, who visited all the great lake sections.

Five and a half million of sockeye eggs had been collected at the hatchery on the Birkenhead River at the head of Lillooet Lake up to the 17th of the month. This exceeded all previous records by three and a half million. Mr. Graham, superintendent of the hatchery, states that the run this year far exceeds in number that of any former year in his experience.

Mr. Babcock attributes the increase in the sockeye run to the Birkenhead to the successful operation of the hatchery.

CANNED SALMON MARKET.

That sellers of canned salmon are unanimous on one point there is no doubt, and that there is "nothing doing" as far as sales go. As for reasons for this condition there are several reasons given, also prophecies that as soon as the wheat is sold the money situation will loose up, and this will enable buyers to purchase supplies they are going light on at present. Another reason given is that there is more or less uncertainty as regards prices. At present there is an inclination to stand firm on last quotations, as there is nothing to be gained even if a seller should make a reduction as the buyer is not a position to take any quantity. It must be born in mind that many of the wholesalers have bought heavily in certain foodstuffs, and at prices that were too high, and in some cases heavy losses have been experienced. This means that there is a tendency by such firms to hold off, and see if there will be drop in canned salmon prices. It must be born in mind by buyers of canned salmon that the packers have been under heavy expense during the past few years, and in proportion to advances in other foodstuffs this variety has not realized the same advances in price. The prices now being asked are not high in proportion to the cost of production, and this year's production is under other years in most instances, and there has been a tendency among the packers not to put up as large packs as would have been possible if conditions had been right.

With the season for the buying of supplies at hand, and the season's pack not moving, it will mean that the packer will plan on a smaller pack for 1921, as they will feel that the longer the buyer holds off, the less they will buy the following season.

However, it is a time of re-adjustment all along the line, and it only means staying with the game, and not weakening. Canned salmon will be eaten to a larger extent than ever after this year, and especially those cheaper varieties that there has been such a small call for in the past, in Canada and the United States.

VANCOUVER WHOLESALE FISH MARKET.

Oct. 11, 1920.

There have been a few changes in the prices of the different varieties of fish on the Vancouver Wholesale Fish market.

HALIBUT ; Chickens are selling at 12 to 13, and mediums at 17 cts. with a fair supply.

SALMON ; Cohoes are selling at 12 to 15 cts. heads off, Pinks have had a good sale this season, and are bringing 10 cts. heads off, while in the stores considerable quantities have been sold as the whole fish at varying prices. One thing is sure the public will buy the fish that are priced right as long as they are good food, whether pink, red or white. Steel-heads are just coming onto the market and are bringing 18 to 20 cts. dressed with heads on.

COD ; Ling cod, local catch are bringing 12 to 13 cts. per lb., and up to the present there has been a very fair supply, but during the past few days there has been a slackening in the supply.

HERRING ; The Point Grey herring have dropped off somewhat, and the result has been some high prices. As high as 9 cts. during the past week, the prices ranging from 6 cts. to 9 cts.

SMELT ; No local smelt at present, but some fresh stock has been brought in from Seattle, and sold at

of crabs, as the firms the other side of the line are 12 cts. per lb.

SOLES ; The local trawlers have had no luck lately, and as a result local sales have been scarce. Prices ranging around 9 and 10 cts.

CRABS. L. Perrin & Co., report a plentiful supply now getting there own for a while. This firm are making a special effort to get the prairies to use more of their shell fish, and they say they are getting results.

LONDON FISH CO., Ltd., say they have some specially fine smoked cod fillets, which selling at 15 cts. per lb., and smoked halibut strips at 20 cts. per lb.

PRESENT PRICES ON CURED FISH ARE NOW AS FOLLOWS. These are a change over former prices :

	Per lb.
Kipperd herring	10c
Bloaters	7 1/2c
Kipperd sable fish	22c
Kipperd salmon	16c
Sable fillets	18c
Smoked fresh salmon	15c
Eastern haddies	16c
Western haddies	10c

Salt Fish.

	Sable Fish	Grey Cod	Herring	Pink Salmon
200 lb. Bbl	22.00	15.00	8.50	15.50
100 lb. Bbl	12.00	8.00	5.25	8.50
500 lb. kit.	6.50	4.75	3.25	4.75

**CHIEF FISHERIES INSPECTOR CUNNINGHAM
COVERS NORTHERN BRITISH COLUMBIA
ON INSPECTION TRIP.**

On his return from a trip to Northern B. C. the first of October, Chief Inspector Cunningham, of the Dominion Fisheries, reported that all Northern natural spawning beds were very well seeded this season. Reports received from the upper waters of Rivers Inlet and Skeena River indicated that a full supply of parent sockeye had reached their spawning grounds.

Climatic conditions had well protected the Fall salmon, pinks, chums and cohoes, as the heavy rainfalls had raised the creeks so that they were in a condition which would allow these species to reach their natural spawning grounds without trouble.

Col. Cunningham stated that the new regulations in force this season for the first time were generally satisfactory. The purse seiners have not done as well as they may have wished, but this was not due to a scarcity of fish but to the limited demand of the world's market for canned salmon other than the sockeye and red spring varieties.

"It is surprising that pink and chum salmon have not a much larger consumption in our home markets remarked the Chief Inspector. They are carefully packed, and their food value is of a very high order."

The Inspector stated that there was every prospect of filling all government fish hatcheries with eggs, and went on to say that the season's operations do not tend to show that any species of salmon indigenous to British Columbia waters are showing any signs of depletion.

The Naas River spawning grounds would have been the subject of a special report by local officers, which had not yet been received.

Canadian Fisheries Association

Minutes.

Prince Rupert, B.C., Sept. 2nd 1920.

The regular monthly meeting of the Prince Rupert Branch of the Canadian Fisheries Association was held in the Hotel Prince Rupert on Sept. 2nd, the meeting being called one week earlier than usual on account of some pressing matters concerning the trade which needed immediate attention.

The chair was taken by Mr. T. H. Johnson and the following members were present: Messrs. Dybhavn, Starr, Autonsen, Sinclair, Nichols, Nickerson and Lee.

The minutes of the previous meeting were adopted as read.

It was moved by J. W. Nichols and seconded by J. Dybhavn that Mr. John E. Davey, buyer for the Canadian Fish and Cold Storage Co. Ltd., be admitted to membership. Carried.

The meeting then went into full discussion over the new ruling whereby the Canadian Express Company are charging express on the 2½ per cent which is allowed by all independent fishermen for the ice and slime adhering to the fish at the time of purchase. All members had received information from Vancouver, Seattle and Tacoma stating that the Express Company at these points accepted invoice weights, or, in other words, were not charged any transportation on the 2½ per cent allowance. The members were unanimous in their opinion that, whereas the Canadian Express Company were charging transportation on invoice weights plus 2½ per cent, it was giving fish dealers at Vancouver, Seattle and Tacoma an unfair competitive advantage over Prince Rupert dealers and it was decided that an effort should be made to have the rates here put on an equal basis with the cities in the south, or the same as they were before this new ruling was put into force. Before any motion was made a discussion took place regarding a supplementary ruling also issued by the Canadian Express Company, wherein they demand all earload shippers to place a number on each and every box going to the cars, and supply details in duplicate of the weights of fish plus the 2½% ice and slime allowance in each box, the weights to go against the numbers.

It was moved by Alderman Dybhavn seconded by J. N. Sinclair that the Chairman and Secretary draw up a memorandum to be sent to Capt. Wallace with a view to getting legal advice from Mr. D'Arcy Scott on both matters. It appeared to the members that we could probably get out of the former by getting a definition of the phrase in the tariff "Net weight of fish", there is nothing in the tariff which calls for transportation being paid on ice and slime adhering to the fish, in other words it looked as if we could evade the ruling on a technicality. With regard to the request of the Canadian Express Company that we number each box and supply details of the weight of each box going to the cars, the members were very doubtful if the ruling could be enforced, and legal advice on this point would also be appreciated. Alderman Dybhavn's motion was carried unanimously.

Communications between Mr. Hager and Capt. Wallace regarding the financing of counsels expenses on the express rate increase case were read and ordered filed. Communications between the local branch and Mr. Hager on the same subject were also ordered filed. The Secretary reported the following subscriptions were received towards the legal fund:

Canadian Fish and Cold Storage Co. Ltd...	\$20.00
Pacific Sea Product Association	15.00
Royal Fish Company	15.00
National Independent Fisheries Co.	15.00
Pacific Fisheries Ltd.	15.00
Atlin Fisheries Limited	15.00
G. W. Nickerson & Co.	5.00
Total	\$100.00

The Secretary advised having sent statistics covering the car shortage during the month of July to Capt. Wallace, Hon. Frank Carvell, Mr. D. B. Hanna and Mr. J. H. Comlon, a letter accompanying each.

A letter from Capt. Wallace regarding the visit of the Hon. C. C. Ballantyne to Prince Rupert and the local Secretary's reply to same were also read and ordered filed.

The meeting then adjourned.

CHEAPER GRADES OF CANNED SALMON, ONLY NEED PROPER KIND OF PUBLICITY.

Dr. Harvey W. Wiley, noted pure food expert, on a recent visit to the Pacific Coast investigated the cheaper grades of canned salmon, and it is worth noting that this prominent food expert expressed his opinion that the cheaper grades of canned salmon were just as palatable and nutritious as the higher priced salmon. With the opinion of such a man as Dr. Wiley to back up, this variety of food there is no reason at all why both the chum and pink salmon may not be marketed in large quantities at prices which would be profitable to the packer, and at the same time give the buying public low priced food.

Once the public started buying these varieties, there is every reason to believe the demand would be permanent, and this would mean a new and larger market than ever for the lower grades of salmon.

It only needs some one to be a pioneer in the marketing of chums and pinks in large quantities in Canada to demonstrate that the public will buy these varieties regularly.

Right in Vancouver large quantities of pinks have been retailed during the past few months, and the writer firmly believes that chums would meet as ready a demand if placed on the market.

FISHING FOR FALL SALMON IS NOT HEAVY.

The purse seiners will not reap the harvest this year which they were so fortunate in securing during the past two or three years. The demand for Fall salmon is not what it has been in previous years, and the American buyers did not come up to the West Coast of Vancouver Island to secure the fish they were so anxious to get in the past seasons. Owing to the condition of both the frozen and canned salmon markets the packers have not been buying chums this season in the quantities that they bought in the past.

On the Fraser many of the fishermen quit fishing when it came time to change the smaller mesh net for the larger, as they claimed the returns would not be worth the outlay for new nets of the larger mesh, which many of them would have to buy. They have had a good season, and high prices have prevailed so that they are very well satisfied.

On Puget Sound, the conditions are practically the same as in British Columbia, both as to the frozen pack, and the canned pack, and the producers are up against much the same kind of market.

WILL THE FISHERIES DEPARTMENT BUILD RETAINING PONDS TO REAR SOCKEYE FRY?

Oregon has demonstrated that sockeye and spring salmon may be held in retaining ponds until they are of fingerling size, and then released, and in the case of spring salmon the returns are way ahead of the cost of retaining the young until they reach the fingerling stage. Just what will be the average size of the sockeye on their return cannot be determined until the first run is over. It is known that the cost of building retaining ponds is very low, and taking this into consideration there is no reason why the inauguration of such a system would not be worth while along lines that are known to be successful. Why experiment when the facts are known, and the Fraser needs replenish so badly?

There is some talk of trying out certain natural lakes and ponds. This is all very well, and may work out providing certain conditions obtain, but it will take time to do this. Quick action is what is needed, and the department will do much to assist in replenishing the Fraser by trying out the known system. This could very well be done, and the experiments with the natural lakes and ponds as rearing ponds could be carried on at the same time. Let us hope something may be done right away in this connection, and that no long investigation may interfere with the carrying out of necessary immediate plans.

VANCOUVER MORNING PAPER FEATURES J. A. PAULHUS.

On the financial page of the Vancouver Daily Sun, of Sept. 23rd, the morning paper of the Western Gateway of Canada, the following article appeared under a very fine portrait of Mr. Paulhus:

"GIVES A LIFETIME TO STUDYING FISH".

Portrait

"Joseph A. Paulhus, managing partner of D. Hatton and company, who have been most prominently connected with the Canadian fishing industry for nearly fifty years, has been 2nd vice-president of the Canadian Fisheries Association since 1918. He is a director of the Lockport Cold Storage Company; largely interested in the Caspédia Silver Fox Company of Bonaventure County, Quebec, and extensively interested in Western Lands and Montreal East Land Company.

In his youth, Mr. Paulhus began the study of fish and their habits and later published several pamphlets along lines which have made him a valuable contributor to the fish literature of the Dominion. His entire business career has been devoted to the scientific and economic handling of the fishing industry, having been with the present firms, of which he is head, for nearly thirty years."

This is certainly familiarizing the Eastern business men to the Western people, when the daily papers publish such comprehensive biographies, and the Western members of the C. F. A. are pleased to see the well known features of one of our most prominent members and officers so portrayed.

STREAMS ON THE EASTERN COAST OF VANCOUVER ISLAND WELL SEEDED.

Upon his return from an inspection of the streams on the Eastern Coast of Vancouver Island, Mr. John McHugh, resident engineer of the Dominion Fisheries, reported that owing to the heavy rainfall during September and the resultant high water, the salmon (both

humpbacks and cohoes) had been able to reach their natural spawning grounds in large numbers, and as a result the beds will be well seeded this year, and there will be every chance of large catches in the next two and four years.

Camps established on several streams will be closed down shortly. Much work has been accomplished this season in the way of removing logs, blasting rock, dams and other obstructions.

Freshets interfered with a continuance of operations on the Cowichan River, but a considerable valuable work had been accomplished previously, sufficient to permit the fish to get over a waterfall, which was formerly impassable at low water. Work will be continued next year.

RESIDENT ENGINEER McHUGH GOES NORTH ON TRIP OF INSPECTION.

Leaving for the North on Sept. 30th, Mr. John McHugh, Resident Engineer of the Dominion Fisheries, will be gone about a month on a trip of inspection in Northern British Columbia. While away Mr. McHugh will visit the completed hatchery at Lakelse, and inspect work that has been going on at Minktrap Bay, Pitt Island, where there were obstructions that kept the salmon from ascending the stream that enters into the Bay. Queen Charlotte Islands will also be visited. During the course of a year the resident engineer certainly covers some territory. His trips take him to many out of the way places, as the salmon ascend streams that in many cases are rarely visited except where they enter the bays or gulfs, other than by the engineer and his men.

VANCOUVER PERSONALS.

Mr. James S. Eckman, Asst. Manager of the Canadian Fishing Co., Ltd., has just returned to Vancouver after an extended trip through the East, where he visited all the large fishing centers.

A. L. Hager, General Manager of the Canadian Fishing Co., Ltd., is taking a holiday by way of a shooting trip through Alberta. Mr. J. P. Todd, the prominent fish broker of Seattle and several friends of Mr. Hager have accompanied him on the trip.

F. E. Burke, General Manager of Wallace Fisheries Ltd., is away on a short holiday.

Hon. F. C. Biggs has announced the details of his plan for reorganizing the game and fisheries inspection service, which is now being put into effect. Until the Minister took charge the enforcement of the game and fishery laws of the Province was in the hands of some 243 overseers, all of whom were part-time men. Some of them received only nominal sums for the work they were to do and the natural result was that the interests of the Province suffered. The new system does away entirely with the part-time overseer. All the men employed will be whole-time men, devoting themselves exclusively to the work of the Department.

The Province has now been divided into four districts each in charge of a warden, who will be paid \$1,800—approximately \$35.00 per week. London will be headquarters for the Western Division, Ottawa for the Eastern, North Bay for the Central and Northern and either Port Arthur or Fort William for the North-Western. Under these four wardens there will be 33 overseers or inspectors who will receive a little more than \$21.00 a week—or at the rate of \$1,100, a year. Of the 33 men appointed, 24 are returned soldiers, and they were chosen from among 300 applicants.

Fishery Resources in Canada

The following appeared as an Editorial in the *Ottawa Citizen* and is worthy of reprinting as the viewpoint of an outside journal on the fishery resources of Canada.

Ottawa has been privileged to entertain the American Society of Fisheries in convention this week. The papers before the convention have naturally been of special interest to the commissioners, officials, research workers and others employed in the bureaus of fisheries. But the Canadian public might with profit to itself take more interest in Canadian fisheries. The value of fish as a wholesome food is hardly appreciated in Canada as it is in Great Britain and other European countries. The untapped wealth of Canadian fisheries could be one of the greatest sources of food supply to the people of this country.

The fishery resources off the coast of Canada are among the richest in the world. They far exceed Great Britain's resources in area, and in the abundance of fish over a given area. But, according to the estimate of the Dominion commissioner of fisheries, the Canadian people eat only about 30 pounds of fish per individual, while in Great Britain the annual consumption is 56 pounds per individual. It is larger still in Germany, Italy, Spain and Norway. It is not because the Canadian people have more choice of better food that so much less fish is eaten in Canada than in Great Britain. Most of the best Canadian fish is shipped to the United States.

The Canadian people east of the Rocky Mountains and west of the maritime provinces hardly seem to realize that Canada is a maritime nation, with so many varieties of fish, and such an abundance, that with more co-operation between producer and consumer they might enjoy fresh fish served to meals every day instead of the occasional Friday meal of fish. But something more than Mr. Meighen's precept to the Trades and Labor Congress, of "reliance upon individual energy, individual effort, and individual reward," would seem to be needed to eliminate the spread between cost and price of fish, before this wholesome food supply can be made available as it should be to the inland dwellers in Canada.

Professor Edward E. Prince, the Dominion Commissioner, told the convention last Monday that the value of Canadian fisheries had jumped from five million dollars fifty years ago to \$60,000,000 today. This twelve-fold increase in "value", unfortunately, does not mean an equivalent increase in quantity of output. Mr. Clarence Jameson, when member for Digby, stated in a speech in the House of Commons, June 5, 1917, that the increase in the production of sea-foods of Canada, between the years 1896 and 1916 amounted to rather less than 8 per cent. Prices (value) increased over 50 per cent. during that period.

A parliamentary committee in the session of 1916, inquiring into the spread between cost and price, found that the increase occurred largely in distribution charges. The report said:

That the shippers' price at points of production of fish, annually consumed in Canada (according to the departmental reports) is roundly \$15,000,000, but under present conditions the cost thereof to the consumers in Canadian centres would probably be \$45,000,000.

The convention of the American Society of Fisheries apparently did not take up distribution problems, but the consumer's interest is very much concerned with distribution: it would be illuminating, perhaps, to have an explanation from the authorities of the cause of the spread between producer and consumer.

The retaining of fresh fish is, doubtless, a difficult business: perhaps even more than the butcher or the fruiterer, the fishmonger's facilities for handling large quantities must be very efficiently organized. When the demand is good, the retailer must be assured of a reliable supply of fresh fish. He cannot afford to fit out an expensive shop, specially designed for the business, with the most modern equipment, unless the fresh supply is organized on something like a daily basis. Given a reliable supply at the right price, there should be no great difficulty in stimulating the demand. It would be easy to educate the Canadian public to use more sea-food.

But the supply is there on the Canadian coasts in such abundance, it would pay to find out exactly what it is that intervenes between the source of supply and the possible market. The parliamentary committee's report states that it is largely in distribution. The Dominion commissioner of fisheries expressed the opinion in 1918 that the use of the staple kinds of fish could be increased four-fold, were more efficient means of handling and marketing carried out." Where does the inefficiency occur? Surely the system of production for profit, as Mr. Meighen would say, energized by the "principle of individual endeavor," is not at fault?

The fishermen are willing to produce more for profit, they would doubtless be glad to increase their output fourfold, provided the system of distribution could handle it. The fishermen actually catch more than they can sell. Nova Scotia fishermen sometimes bring in boatloads of herring merely to have their day's catch rejected by the cold storage dealers, because something behind is intervening to discourage production.

Before the grain-growers organized to operate co-operative elevators in Western Canada, the farmers would sometimes haul their grain thirty miles or more to the privately-owned elevator, merely to be offered such low prices that they would feel inclined to haul it back again, but for the fact that they had no other means of disposing of it. It is possible to see fishermen similarly situated on the Canadian coasts. Sometimes they cannot get any price for their fish, and, lacking even means to salt some of their catch for their own use during winter, boatloads of fish are thrown back into the sea.

It should be understood by this statement that the shippers at the coast ports are mere heartless exploiters. Generally the shippers and the fishermen have interests in common. They would gladly ship more fish, just as the fishermen would gladly catch more. It is in their own interest to handle more. But between the shipper and the consumer, the financial system somewhere ceases to function when supplies are abundant.

It is just possible that "reliance upon individual energy, individual effort and individual reward" is not the last word in the development of Canadian natural resources?

Convention of American Fisheries Society

Fiftieth Anniversary Congress held in Ottawa, Sept. 20th, 21st, and 22nd, 1920.

Members of the American Fisheries Society from all parts of the United States and Canada met in Ottawa on Sept. 20th, 21st and 22nd, to hold their fiftieth annual convention.

Fine weather prevailed and an interesting programme was carried out. While in Ottawa, the members and their ladies were entertained at several functions by the Department of Marine and Fisheries and the Ottawa Board of Trade.

The Convention programme was as follows:

Monday, September 20th, 1920.

10.00 a.m.—Registration of Delegates.

Opening Session.

10.30 a.m.—Convention called to order by President Carlos Avery. Addresses of Welcome. The Department of Marine and Fisheries. Mr. A. Johnston, Deputy Minister. The City of Ottawa. His Worship, Mayor Harold Fisher.

Business Session.

Election of new members. Report of Treasurer. Report of Executive Secretary. Announcement of Committees.

12.45 p.m.—Recess.

2.30 p.m.—Open session, Convention Room. Reports of Vice-Presidents of Divisions. Reports of Standing Committees. "Fifty years of Federal Fisheries Administration in Canada." Prof. E. E. Prince, Dominion Commissioner of Fisheries. "The Alaska Fur Seal: an International Asset." Dr. H. M. Smith, U. S. Bureau of Fisheries. "Adequate Fish Inspection; A Means of Better Fish to the Consumer and Increased Fish Food Consumption." Arthur L. Millett, State Inspector of Fish for Massachusetts. "The Study of some Factors Influencing the Course of Migration in the Pacific Salmon." Prof. H. B. Ward, University of Illinois.

5.45 p.m.—Recess.

8.00 p.m.—Open session, Convention Room. "Canada and the United States can restore a great fishery." John P. Babcock, Provincial Fisheries Department, Victoria, B.C. "Development of the College of Fisheries." Prof. John N. Cobb, Seattle, Wash. "The Scientist and the Practical Man in Fisheries Work." Raymond C. Osborn, Ohio State University. "Some Previously unrecognized Anatomical Facts and their Relation to Fish Culture." William Converse Kendall, U. S. Bureau of Fisheries. "Climates of our Atlantic Waters." A. G. Huntsman, Atlantic Biological Station, St. Andrews, N.B. "The Circulation of the Water in the Bay of Fundy and Gulf of Maine." Prof. James W. Mavor, Union College, Schenectady. "Economic History of Copepods." Prof. Arthur Willey, McGill University. "Twenty-five years of Biological Fisheries Research in Canada." Prof. E. E. Prince.

Tuesday, September 21st, 1920.

9.30 a.m.—Open session, Convention Room.

"Artificial Propagation of Oysters." Wm. F. Wells. "Some Fish Cultural Notes." John W. Titecomb, New York Conservation Commission. "Notes on Practical Fish Culture." Dwight Lydell, Michigan Fish Commission. "The Coregonine Fishes of Lake Huron." Walter Koelz, University of Michigan. "Principles involved in the Preservation of Fish by Salt." H. F. Taylor, U. S. Bureau of Fisheries. "Experiments in Trout Feed-

ing." C. O. Hayford, Supt. State Fish Hatchery, Hacktettstown, N.J. Address, J. A. Robertson, Skerryvere, Cleveley's, Blackpool, Englaid. "Fishing Pollution in Ohio Waters, Demonstration of Methods." John T. Travers, Ohio Bureau of Fish and Game.

12.45 p.m.—Recess.

2.30 p.m.—Open session, Convention Room.

"A Survey of Game Fish conditions in Ohio." Raymond C. Osburn, Ohio State University and Ohio Bureau of Fish and Game. "The Food of Young Small Mouth Bass in Lake Erie, in the vicinity of Put-in-Bay." E. L. Wickliff, Ohio State University and Ohio Bureau of Fish and Game. "The Food of Young Large Mouth Bass in Lake Erie, in the vicinity of Put-in-Bay." C. L. Turner, Beloit College, W. C. Kraatz, Ohio State University and Ohio Bureau of Fish and Game.

"The Gizzard Shad, in relation to plants and the Game Fishes." L. H. Tiffany, Ohio State University and Ohio Bureau of Fish and Game. "The Inexhaustibility of the Sea." Prof. E. E. Prince. "What are Rainbow Trout and Steelhead Trout." Wm. C. Kendall, U. S. Bureau of Fisheries. "Relationships of the so-called 'blue pike' and 'yellow pike'." Wm. C. Kendall.

5.45 p.m.—Recess.

8.00 p.m.—Open session, Convention Room. Moving pictures of Fish and Game work in Ohio. A series of films showing educational work of the Ohio Bureau of Fish and Game.

Wednesday, September 22nd, 1920.

9.30 a.m.—Open session, Convention Room. "Spawning Habits of the Spiny Lobster, *Panulirus argus*, with notes on the Artificial Hatching of the Eggs." D. R. Crawford, U. S. Bureau of Fisheries.

11.15 a.m.—Motor Tour of Ottawa. Courtesy of the Board of Trade of the City of Ottawa.

12.45 p.m.—Return to Chateau Laurier.

1.00 p.m.—Luncheon in Chateau Laurier Grill Room, given by the Department of Marine and Fisheries to Delegates, Guests and their Ladies.

3.30 p.m.—Open session, Convention Room. "Forest Protection and its Effect on Fish and Game Life." Hon. Honoré Mercier, Minister of Lands and Forests, Quebec. "The Relation of Certain Aquatic Plants of Differing Habits of Growth to Oxygen Supply and to the Capacity of Small Ponds to Support the Top-Minnow, *Gambusia Affinis*." R. L. Barney and B. J. Anson, U. S. Bureau of Fisheries. "The Food of Larval and Post-larval Fishes of Plymouth Sound." Marie, V. Lebour, Plymouth Biological Station. Report of Committees. Election of Officers.

5.45 p.m.—Recess.

8.15 p.m.—Regent Theatre Party, given by the Department of Marine and Fisheries to Delegates, Guests and their Ladies.

Thursday, September 23rd, 1920.

Address, Hon. F. C. Biggs, Minister of Public Works and Public Highways, Ontario.

7.00 p.m.—Dinner in Chateau Laurier Banquet Room, given by the Department of Marine and Fisheries to Delegates, Guests and their Ladies.

It will be noted that several items on the programme were entered for the \$100 Prize contest for the best essay on a subject of immediate interest to the Society. This was won by Dr. W. A. Kendall of the U. S. Bureau of Fisheries. His paper on "The Structure of Salmonoid Fishes and the relation of these factors to Fish Culture" was regarded by the judges as being the most informative and interesting of the many very able papers presented by competitors.

Welcoming Addresses.

In his address of welcome to the visiting delegates, Mr. A. Johnston, deputy minister of marine and fisheries, emphasized the good will and co-operation that existed between citizens of the United States and citizens of Canada these many years. He declared it was rather unique for an American organization to choose as its meeting place the capital of another country, yet that was but an example of the good will and fellowship that existed between them. If he had any advice to give them it was simply this, "When you get to the boundary line, forget it."

Another Boundary Line.

Mayor Harold Fisher, who welcomed the guests on behalf of the city, spoke along similar lines. Taking the words "invisible boundary line" as the subject of his text he applied it to the amity and co-operation existing between the two sister provinces of Ontario and Quebec. It was but an "invisible boundary line" that between Ottawa and Hull, for instance, and he felt sure the guests would soon come to know it. If he could give them a warning it was to advise them when they crossed the line across which flowed an imaginary river, they stay there long enough to make sure of the keyhole.

Dr. William C. Adams, director of the division of fisheries and game, department of conservation, Massachusetts, replied to the addresses of welcome. He stated it was his first trip to this country, but it did not take him long to get acquainted and after registering at the Chateau he lost no time in crossing the boundary line. "Before we go too deep in the discussion of international affairs," he declared, "let me inform all present that I am an authority on such matters."

He appreciated the welcome given them, and indeed it was hardly necessary to say they did not come as "foreigners." For themselves they never regarded Canada as being an outsider and he believed that the American Fisheries Society, true to its name, included everything on the North American continent. The time would come when the "line" would become of as little consequence as the Mason-Dixie line. The time, in fact, was at hand when what is Canada's interest in relation to its resources in fish and game, lumber and minerals, etc., would likewise be the interest of the United States.

While most of the papers and addresses were of interest to scientists and fish culturists rather than to those engaged in the commercial fisheries, yet several of the items on the programme were worth reading and digesting by commercial fishermen. Professor Prince

of Ottawa addressed the congress upon several subjects connected with Canada's fishing industry. He told many fish stories, but they differed from the usual fish story told by the ambitious angler in that they were corroborated by pictures. He then reviewed by means of the slides the leading Canadian fisheries, showing the strides this industry had made of recent years. Particularly interesting was that part of his lecture devoted to the fisheries on the Fraser River, where the most famous salmon fisheries in the world are located. He covered the fisheries of the Atlantic coast, of Nova Scotia, New Brunswick, Manitoba and British Columbia and his address was much enjoyed. To impress the value of fish as food he stated that he knew one squaw whose life-long diet had been fish, who was now 116 years of age, and as yet showed no alarming signs of old age.

An interesting address on the pollution of waters was given by John T. Travers of the Ohio Bureau of Fish and Game. The speaker illustrated his remarks by practical demonstrations of water polluted by industrial waste and discharges.

By the use of certain chemical compounds, the formulae for which he obtained through scientific research work and experimentation, he showed the action of the anti-pollution combination in its task of re-purification. The particular point stressed by the lecturer was that polluted water, a menace to human life, to animal life, and to aquatic life, might be purified and made habitable without interfering with modern manufacture. The process was declared to be extremely simple and worked no hardship on any industry. In spite of that any form of pollution yet detected in the waters of Ohio could be eliminated. He announced that he would gladly furnish the details of the process free to any manufacturing plant or industry that wished to use it.

Endangers Fish Life.

"Industrial pollution or waste from manufacturing plants as well as copperas water from coal mines is what is despoiling our streams, killing off all aquatic life and marking our once beautiful creeks and rivers seething sewers of filth and breeding places for disease germs, deadly to man and beast", declared the speaker. Many streams throughout the country were so grossly polluted by manufacturing industry caused by the chemicals they used, that not only all kinds of fish life but also all the small organisms that fish fed upon were destroyed. The speaker appealed for more consideration of the subject since it was more serious than it was at first hand realized.



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Other speakers included Mr. Dwight Lydell, of the Michigan Fish Commission, who spoke on practical fish culture, and James Navin, of Wisconsin, who gave a review of fifty years of work in fish culture. Mr. C. O. Hayford, superintendent of the state fish hatchery, at Hackettstown, N.J., spoke on "experiments in trout feeding."

A specially interesting paper on "Adequate Fish Inspection; a means of better fish to the consumer and increased Fish Food Consumption" was read by Arthur L. Millett, State Fish Inspector for Massachusetts. Mr. Millett declared that the marketing of inferior grades of fish had a tendency to decrease the consumption, because the consumer did not find them appetizing. He thought that by eliminating second quality fish entirely on the markets, the producer and consumer would be better pleased.

Prof. Prince elected Vice-President.

Professor E. E. Prince, Dominion Commissioner of Fisheries, was unanimously elected vice-president of the American Fisheries Society at the concluding session. This honor is not only a recognition of Professor Prince's valuable contributions to the work of the society, but to the part that Canadians have taken during the past few years along the lines of fish culture. Mr. Nathan R. Buller, of Harrisburg, Pa., was chosen to fill the president's chair.

All papers read were reserved for publication in the Society's Bulletin and the **Canadian Fisherman** will publish some of the most interesting in a later issue.

Many Cannery managers from the Northern B. C. canneries are back in town, and their familiar faces may be seen any day on the streets.

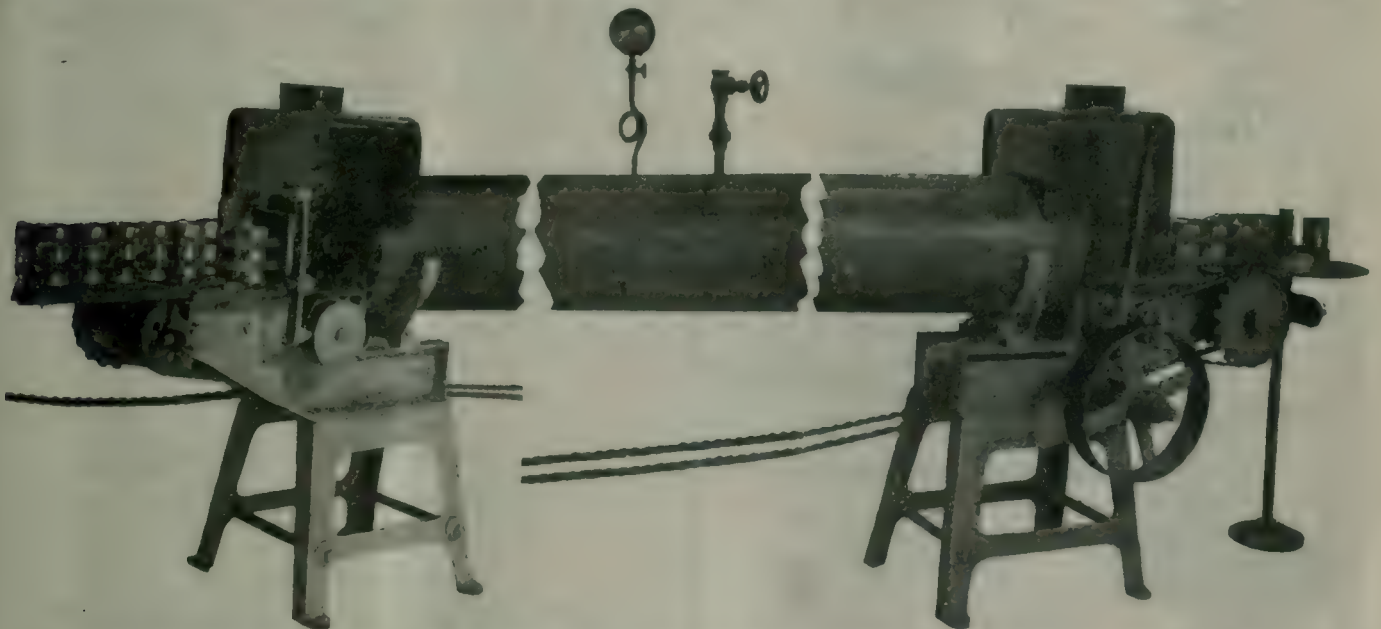
INTERNATIONAL SCIENTIFIC COUNCIL.

On Thursday, September 23rd. a representative gathering of fishery officials and scientists from Canada, the United States and Newfoundland met in Ottawa under the chairmanship of the Deputy Minister of Marine & Fisheries to discuss ways and means for the formation of a co-operative scheme of fishery investigation in North American waters by the Governments of Canada, United States and Newfoundland.

Among those present were Messrs. W. A. Found, Ass't Deputy Minister of Fisheries, Ottawa; Dr. E. E. Prince, Ottawa; Prof. Huntsman, Toronto; Dr. Hugh M. Smith, U. S. Bureau of Fisheries, Washington; Dr. W. Bell Dawson, Tidal Survey, Ottawa; Prof. John N. Cobb, Seattle; Mr. Whiteway, Newfoundland Dept. of Fisheries; Dr. Bigelow, U. S. Bureau of Fisheries; Dr. Kendall, U. S. Bureau of Fisheries; Dr. Radcliffe, U. S. Bureau of Fisheries; Dr. Willey, McGill University, Montreal; Dr. A. P. Knight, Biological Board of Canada; Mr. Stewart, Hydrographic Survey, and F. W. Wallace, Secretary, Canadian Fisheries Association.

All the members present spoke upon the need for co-operative effort in the investigation of sea life and exploration of the fishing grounds and the general tone of the remarks was unanimous for an international council between the three countries concerned.

At the conclusion of the meeting, a resolution was passed recommending that the Governments of Newfoundland, Canada and the United States take steps to establish an International Council for Fishery Research in North American waters. Such a Council, when formed, will endeavour to work in close harmony with the European Scientific Council for the Exploration of the Sea.



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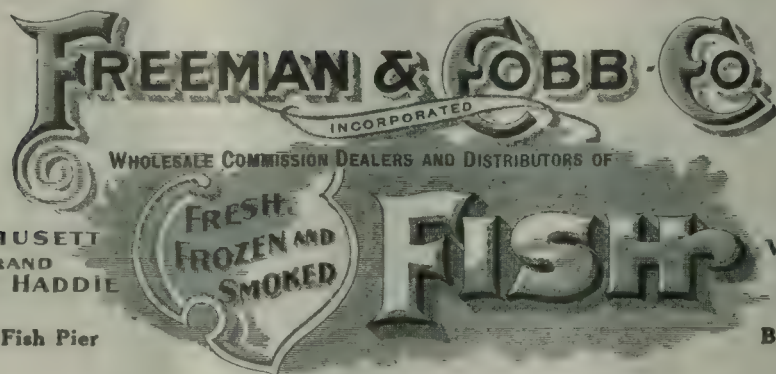
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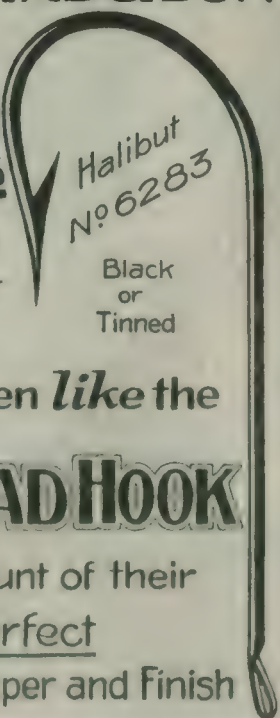


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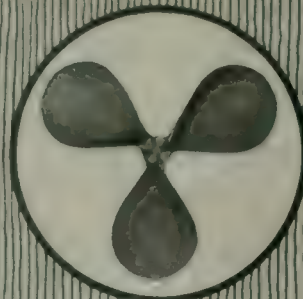
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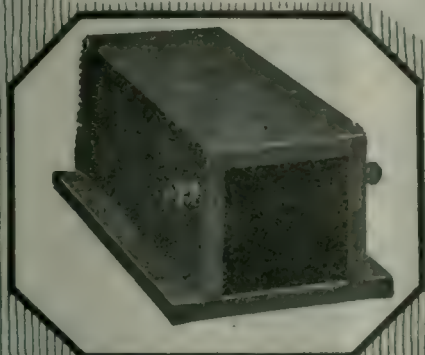
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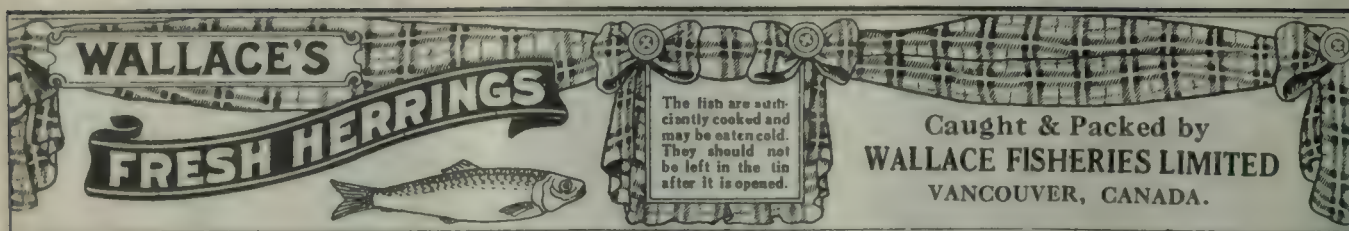
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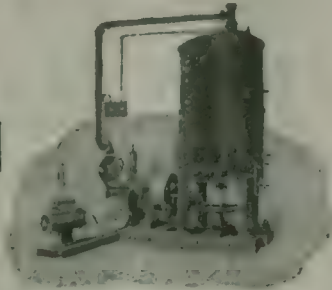
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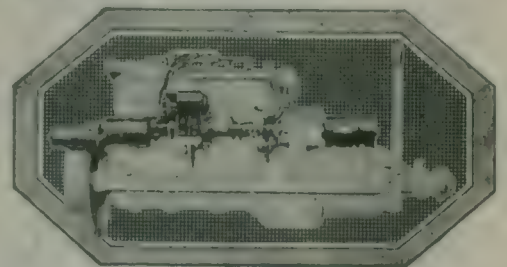
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Mr. Cobb was for 17 years a field agent of the U. S. Bureau of Fisheries, and in the course of his duties visited practically every fishing settlement and packing establishment in the United States many times; later was editor of the Pacific Fisherman, and now is Director of the College of Fisheries, University of Washington.

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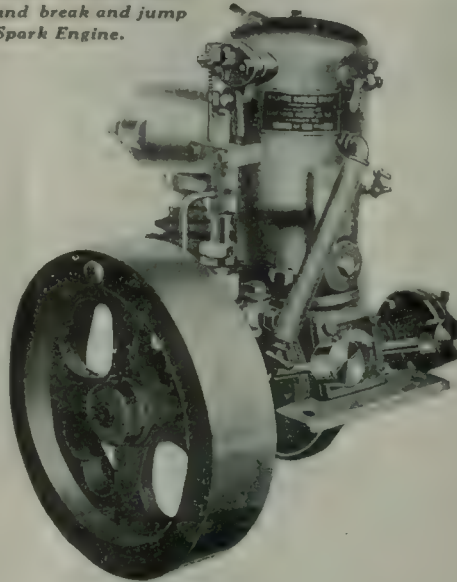
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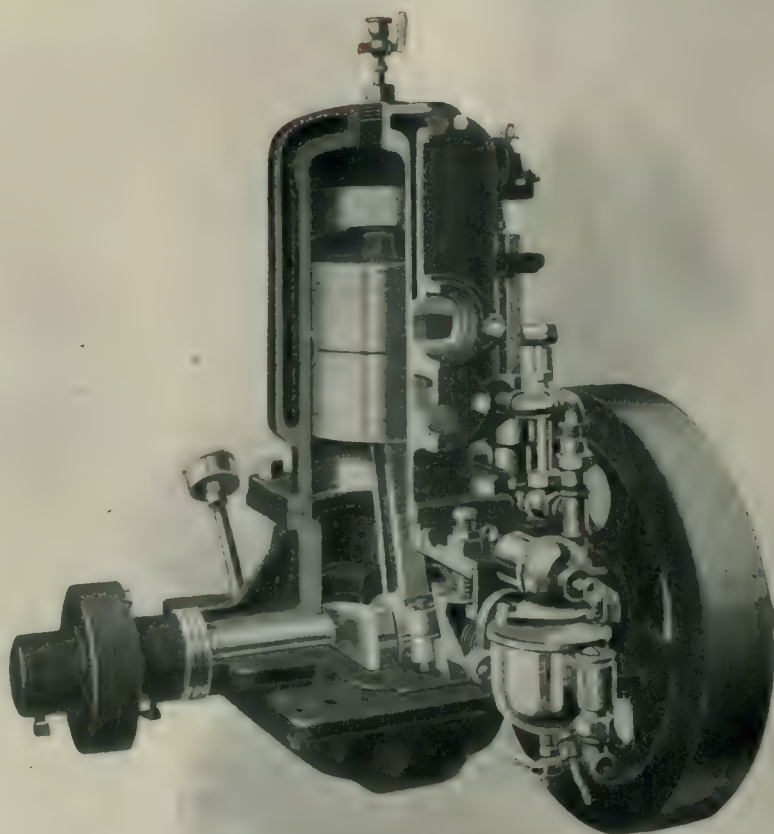
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VOL. VII.

GARDENVALE, P.Q., NOVEMBER, 1920

No. 11

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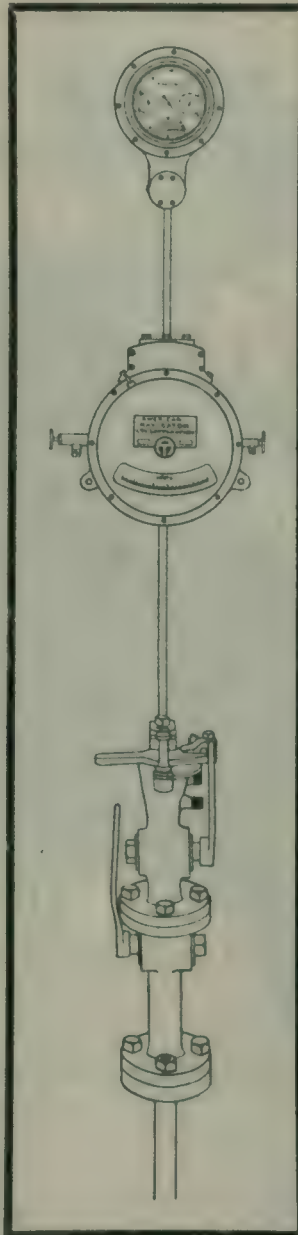
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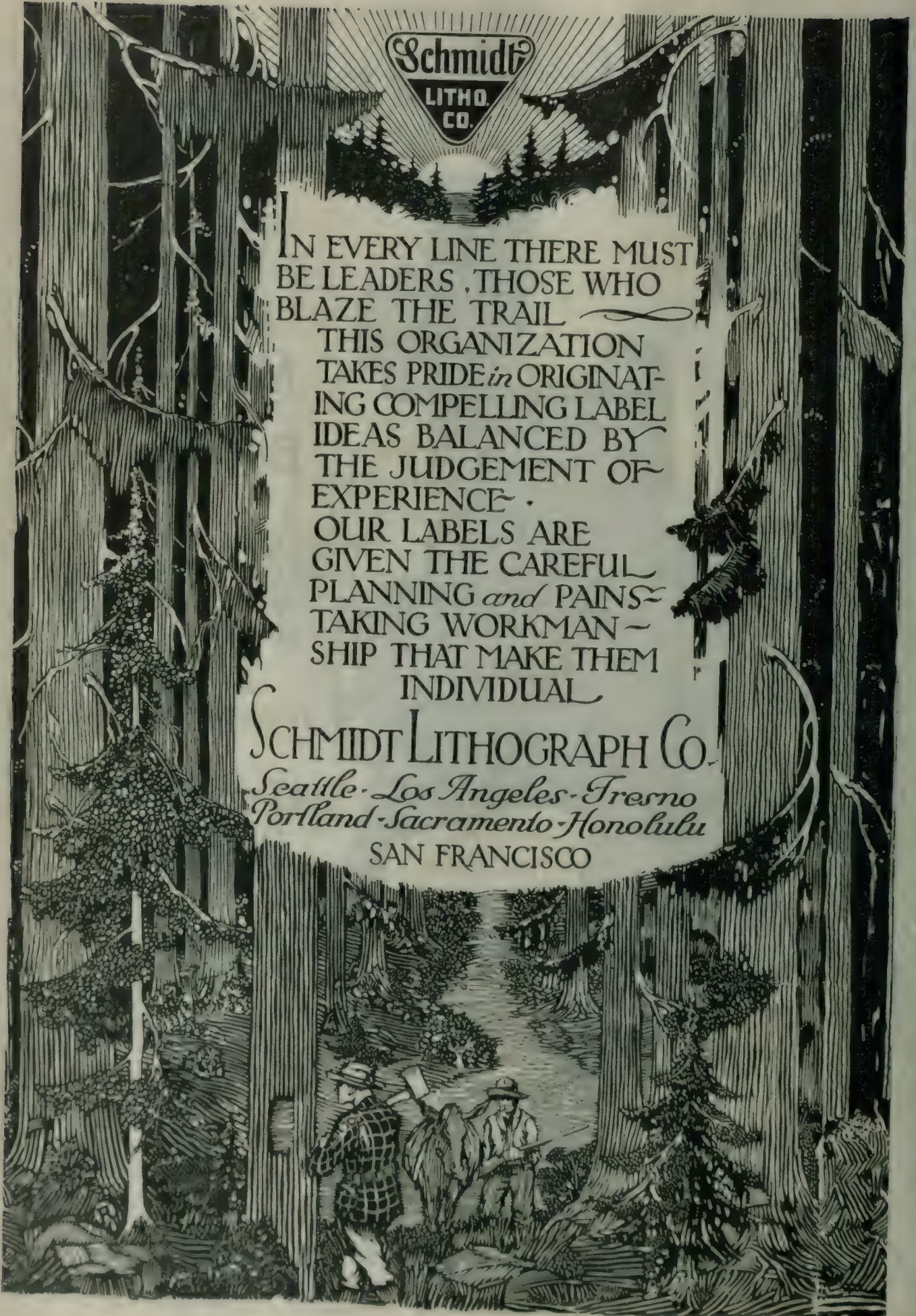
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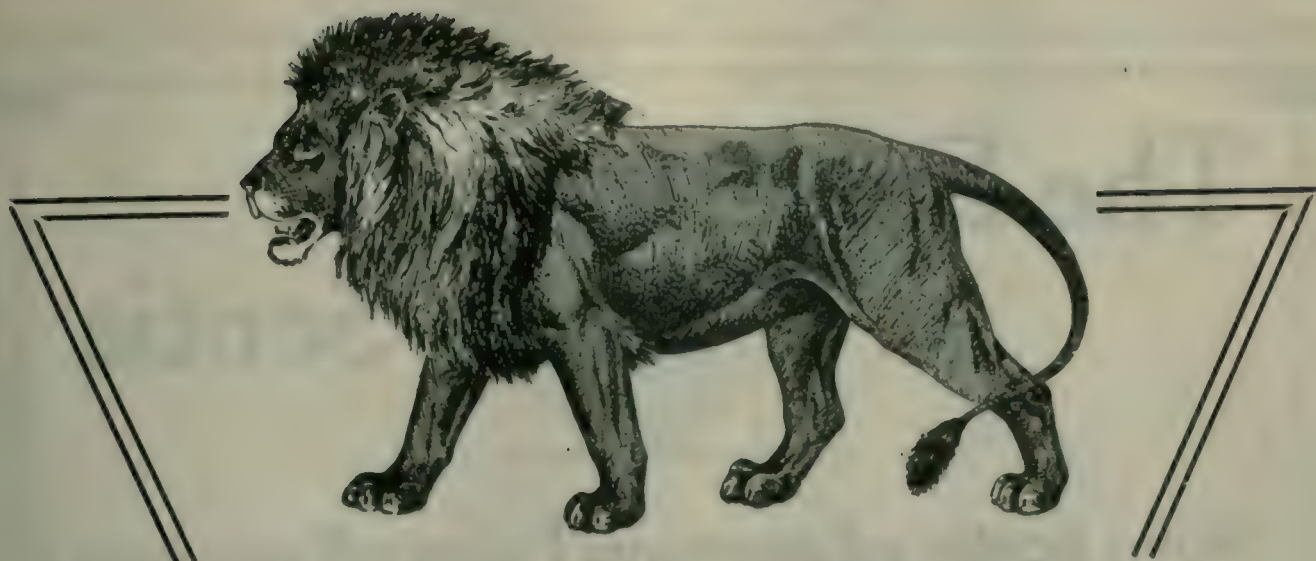
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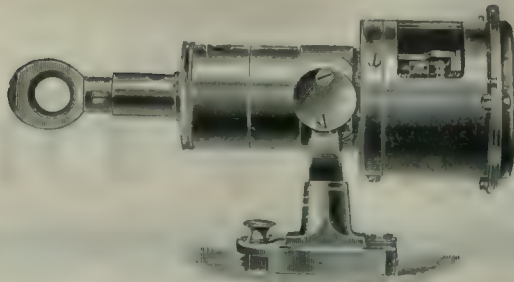
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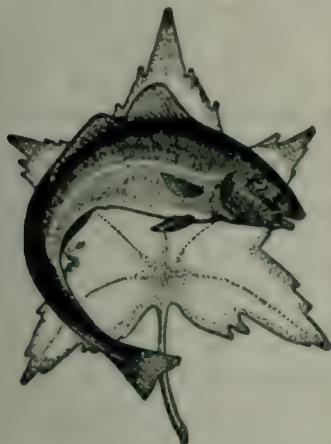


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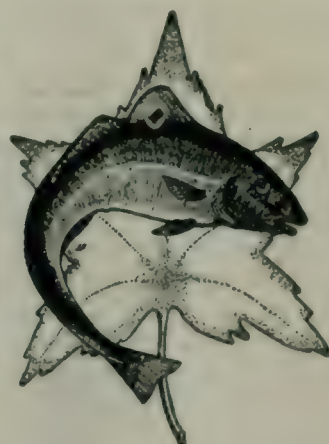


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EDITORIAL



FREDERICK WILLIAM WALLACE
Editor



THE YANKEE BLUENOSE VICTORY.

The Yankee Bluenose has beaten the Bluenose Bluenose. In the exciting fishing schooner race on the Atlantic ocean off Halifax the Gloucester vessel "Esperanto", commanded by Captain "Marty" Walsh, has beaten the Lunenburg vessel "Delawana", commanded by Captain "Tommy" Himmelman. But the contest proved to be a case of Bluenose against Bluenose, for the Yankee schooner was commanded by a sturdy skipper hailing from Digby, Nova Scotia.

The race of the competing Nova Scotia fishermen in the first stage, and the later race of a somewhat international character, have aroused a lively interest in maritime affairs. Conducted under the management of men who have a fine conception of the good that may be done by manly competition, the races have made for good sport and good fellowship. Winners and losers have accepted victory and defeat in the chivalrous spirit that always characterizes the games of manly men. Halifax, noted for its hospitality, has welcomed and entertained the Yankee visitors and sent them home happy in the enjoyment of their prizes and of the good fellowship created by the event.

Keen observers of the lines of the competing vessels were not surprised by the victory of the Bluenose from Gloucester over the Bluenose from Lunenburg. In the creation of the large fleet of fishing vessels which hails from Nova Scotia speed has not usually been regarded as a point of importance. The Nova Scotia vessels have been built with primary regard to fishing, and with secondary regard to carrying capacity when occasionally required to engage in freighting. The Gloucester vessels have all along paid more regard to speed and to smartness of appearance. In late years there has been an improvement in the appearance of the Nova Scotia vessels, so that there is not so much difference as there once was in the general appearances of the two classes of craft. The

Gloucester men, however, still turn out schooners better designed for racing than the Nova Scotians. But if racing is to be hereafter regarded as one of the purposes of the ship, the bluenoses at home may safely be counted on to produce vessels that will better fit them for the competition. Whether it is worth while changing their models for the sake of the racing may, perhaps, be a debatable question. But if, as is suggested, this fishing schooner race is to become an annual event, we may expect to see a lively competition in the shipyards along the Nova Scotia coast which turn out the vessels for the fishing fleet.—*The Canadian Journal of Commerce.*

GREATER CO-OPERATION NEEDED.

Efforts of all Interested in Fishing Industry Must be United if Trade is to be Developed.

In Great Britain the per capita consumption of fish is estimated at sixty pounds per annum. Still an elaborate campaign is in progress, in which all branches of the industry are co-operating to increase the use of seafoods. One of the slogans being used extensively is:—Eat Fish Once a Day.

Now if in the Old Country where the people are eating a fairly healthy proportion of fish, this seems advisable, how much more is such a campaign necessary in this country where the per capita consumption of fish is about nineteen pounds a year. The main trouble is that we have not got the many co-operating factors they seem to have in England. Here the wholesaler and the retailer appear to have very little in common. There are too many loose strings. There is no doubt about it that the large distributors see the advantage of co-operative publicity, but they find it hard to get the co-operation. If they feel anything should be done they must do it themselves. It is a case of "let George do it". But if successful educational work among the consumers is to be done,

all interested in the trade must join hands. Increased consumption will mean better business all round and anyone with any notion of progress should be interested in seeing his business grow.

At the present time the large distributors are fairly well organized. The Canadian Fisheries Association is a tower of strength to the industry, but subsidiary associations seem to exist in little more than name only. As far as the retailers are concerned they are absolutely without organization. In many of the cities fish merchants are members of the Retail Merchants' Association or some other general body. But they should be associated along trade lines. They should get together and exchange ideas, discuss difficulties of trade, as well as national and parochial situations in the fish business. In a certain city some obstacle such as unsatisfactory transportation facilities, etc., may be hindering the business. One merchant will not take the matter up. He will let it slide. But if all the fish dealers in that particular city saw the thing in the same light they would not hesitate to seek adjustment of the difficulty. From local bodies provincial and national organizations would develop.

It is understood that, for the purpose of bringing the retail end of the industry into line with the general movement, the Publicity and Marketing Branch of the Fisheries Department, Ottawa, has a plan in view to put the facts of the situation before retailers individually and to secure their co-operation.

FROZEN FISH THE SOLUTION.

Many Obstacles Would be Overcome if Public Were Properly Advised.

In England where a large population is concentrated in a comparatively small area, the problem of getting fish to market in good condition still confronts the industry. Fish could be laid down in any quarter of the country in excellent condition, but the difficulty is that people refuse to buy fish that is frozen. On the continent fish is shipped long distances in the fresh state, packed well in ice and with certain primitive insulating materials. Authorities on the matter insist that the freezing of fish is the logical and economical way of transporting it, but the consumer can't see it. The scheme of freezing fish has fallen into such disrepute that investigators are now at work to discover some other means of preservation which will not attract prejudice. One man who has been experimenting for years announces he has invented an electrical process for driving out the moisture. His scheme, he says, makes it possible to preserve fish indefinitely without appreciably detracting from the original article in any way. The fish is restored when required for use, by allowing to absorb moisture. This, as many other

plans that have been suggested, while it sounds all right, may not stand the test in practical use when so many things must be considered—economy of treatment, attitude of general public, etc.

For ourselves we cannot see the necessity of all this investigating. We have an excellent process of preserving fresh fish in transit to remote markets. We will admit that it does not meet with popular approval. That, however, does not alter the situation. We have the word of many investigators—very recently that of Dr. E. D. Clark of the Food Research Laboratory of Philadelphia, who has just completed a two years' study of the matter—that fish suffers no appreciable loss of food constituents through preservation by the freezing method. The system then is all right, and it serves its purpose splendidly. Then our effort should not be devoted to searching for new devices which would have an equally doubtful reception, but it should be in the way of correcting public opinion and removing the unwarranted prejudice against frozen fish.

In Canada, and in the United States as well, it is next door to impossible to supply the central markets with fresh fish from either coast unless it be frozen. The shipping of fresh fish preserved in ice is expensive and of very doubtful value, except where the haul is very short. It has been proved time and again that fish properly frozen on the Atlantic coast can be laid down in the remotest market in the very best condition, where fresh fish, carefully iced, would be putrescent after the same journey.

To increase the consumption of fish in Canada, the general public must be educated to the use of the frozen article. It must be impressed upon them that it retains all its food properties and flavor if it is properly handled. In the past retail dealers and housewives have been careless in thawing out frozen fish.

A campaign of this kind should stimulate the frozen fish business. Immediately many of our transportation problems would vanish, and a flying start would be made in improving our system of supplying Canadian markets. At present certain centers are well provided with fish, while other quarters are skimped. Our present scheme of distribution reminds one of a child eating an apple. He gnaws a circle around it and throws the balance away.

CAPITALIZING FISHING INDUSTRY.

What a tremendous asset is represented in our fisheries! To place a fixed valuation upon their potentiality is impossible, but a vague conception of what it would be may be acquired by letting one's thoughts dwell in this channel: How long have our waters been producing fish as food for mankind? What has been the material value year by year of

these seafoods? How long will our waters continue to furnish mankind with food? What will be the material value of their product year by year in the future?

Considering the annual production on the one hand and the inexhaustibility of the supply on the other; considering the fact that employment is provided permanently for a hundred thousand men, but that no effort is required to keep the submarine harvest field in good shape; and considering, furthermore, the extent of non-producing assets in the form of untouched fishing areas, at what sum would you place the capital value of the fisheries?

Regarding the fisheries in this light leads one to the conviction that they form the greatest natural resource provided by the universal arrangement of things. Then the question arises: Why have we so little respect for it? Why is the tasty little creature from the sea treated with such contempt? Its food qualities surpass those of more popular foods commanding five and ten times the price. Is it merely the fact that fish is so readily available which makes it so unpopular? Were it less common, more difficult to produce, and requiring careful cultivation, would it be more highly respected? In other words, is the munificence of Providence regarded with contempt while a more precarious gift is esteemed? That would seem to be the case.

One wonders if the relation between the aristocratic turkey and the modest herring would be reversed were turkeys fished from the sea in hundreds of thousands of tons, and herrings required the careful attention necessary in the raising of turkeys.

It seems to be the psychology of mankind in general to ask what is hard to get. If something is scarce we seek it. If something is abundant we abhor it. It is a foible of mankind to take the illogical course. The unexpected always happens.

Then there is only one thing which will increase respect for fish and develop a more appreciative taste. What is it? Why, a fish famine, of course.

TUNA FISHING AS A COMMERCIAL INDUSTRY.

Sportsmen have been interested for some years in catching big fish with rod and line. The greatest thrills, however, have been experienced in angling for tuna, the giant mackerel which frequent the waters of both the Atlantic and Pacific coasts. San Bernardino, Cal., has been the centre for sportsmen of the Pacific coast, while Port Medway Harbor, Queens County, Nova Scotia, has attracted a number of sportsmen for several years. Mr. J. K. L. Ross, Montreal, has a good story to relate of his experience off the Cape Breton coast, when he succeeded in landing a tuna weighing over 800 pounds.

Considerable numbers of this species of large fish have been frequenting the coast many years, but until recent years they were looked upon as a nuisance by the fishermen, and when taken incidentally were

utilized for the manufacture of farmland compost, as they were not looked upon as a desirable food fish.

Some ten or twelve years ago, however, a market was found in the United States, chiefly in Boston and New York, and considerable shipments were made each year from the Clark's Harbour, district of Shelburne County, Nova Scotia, realizing about .03c per pound. The market has been steadily increasing and shipments made this season were disposed of at .09c per pound.

No special effort, however, was made for capturing the fish until three years ago when the Coolen Brothers and Freeman Harnish, of Hubbard's Cove, Lunenburg County, utilized a double-headed mackerel trap-net, which was operated off Hubbard's Cove during the tuna run which takes place during July and August of each year. Catches were readily and profitably marketed in Boston at good prices, and the last two years particular attention has been paid to the fishery.

The past season was most successful,—the two trap-nets taking about 600 fish, averaging about 450 lbs. each. During the latter part of August the fish were large, many weighing 700 pounds each. In one day, during the latter part of August, seventy-six were captured.

After being taken in the trap-nets the "spiller" is utilized to draw them within killing distance, after which they are landed, the heads and tail fins cut off, and the remainder of the whole fish, intact, each in separate boxes, shipped by rail to Yarmouth for transportation to Boston by steamer.

The fishery as a definite industry is established in Hubbard's only. The number of persons engaged is small, comprising only about twenty. Incidentally a few others are employed in preparing the fish for shipment.

The value of the tuna as a food fish will compare favorably with any of the large fishes, the steak portions being not unlike a good quality of beef. Indeed, it is difficult to discern properly prepared chipped tuna steak from chipped beef. Other portions are not unlike veal and is greatly relished by epicures. The flesh is held in high esteem by the Italian and Portuguese residents of Boston and New York, and a good trade in the canned product could easily be secured for a large pack, particularly if put up in oil.

Canned tuna has already taken a good position in the retail trade. The chief difficulty in establishing a canned tuna industry is that the supply cannot be relied upon. A school may strike in at any time during July and August and not be followed by any other schools for several weeks. It is quite possible, however, with proper facilities, to preserve the catches in good condition for canning for several weeks, and thus provide sufficient supplies to stabilize the operation of a cannery during the season.

There is little or no retail trade in the tuna trade in the Maritime Provinces, for, as already noted, its value as a food fish has not yet become recognized.

Early in September, about the close of the run, Messrs. Bach and Finn, the official photographers of the Department of Trade and Commerce, succeeded in getting a complete series of "shots" covering the fishery at Hubbard's Cove. The whole intensely interesting operation of "playing" the big fish in the spiller, and killing and landing them, was most successfully secured. These pictures are, without doubt, the only views of the kind existing, and will doubtless awaken much interest when they are shown on the Movie screens throughout the country.



Fishing Schooner's Race

Bluenose Skipper Piloted American Boat to Victory.



Promoted though it was in a hurry the International fishing schooners' race off Halifax aroused widespread interest, and in the Nova Scotia and New England an enthusiasm never shown for the America cup races.

"As a matter of choice we nominate this international fishermen's contest as the supreme sporting event of 1920, said the "New York Tribune", at the end of a long editorial. And Premier Murray of Nova Scotia said, "Speaking as a Nova Scotian I say that I believe that this was the greatest sporting event that the American continent ever witnessed."

The Associated Press, the Canadian Press and other big news agencies gave nearly as much attention to the fishermen's contest as they did to the millionaires yacht race off Sandy Hook. One great Boston daily sent a staff photographer and three special writers to cover the race, and among the latter was J. B. Connolly, the famous writer of sea-stories. And Connolly showed an enthusiasm for the fishermen's race that was never manifest in his reports of the America cup races.

While Canadians naturally regret that the representative of their own fishing fleet did not carry off the honors they have the consolation of knowing the captain Thomas Himmelman and the crew of the Delawana made a splendid battle, and that the skipper of the American champion was a native of Nova Scotia, a seaman and a sportsman of the first water. Captain Marty Welsh and his Gloucestermen won clearly and clearly under the weather conditions obtaining during the two races; but there are considerations which enable Canadians to hope that their fisherman may make a better showing another time. For one thing there was not wind enough during either race to bring out the best qualities of fishing vessels or fishermen. Both the Nova Scotians and the New Englanders would probably have been better satisfied if the weatherman had given them an opportunity to fight it out in half a gale of wind, for the fishing vessels develop their best speed when they are under shortened sail—not when they are able to fly all their kites. In the first race the Delawana was too heavily ballasted to run a race in moderate winds. That was probably an error of judgment on Captain Himmelman's part; but there are tricks in every trade—only to be learned by experience.

And this was his first race against an American craft.

If the Delawana had obtained all the wind she could have stood up to, the result of the first race might very well have been different. She looked to be more powerful than her American rival, and ballasted as she was, she might have claimed the honors of a day of strong winds.

However, she lost and lost gamely, and as Lieut.-Governor Grant of Nova Scotia told Capt. Himmelman "its' better to have raced and lost than never to have raced at all." And there will evidently be other races—other opportunities for Canadian Fishermen to prove their prowess. The great interest displayed in the contest of Halifax justifies the expectation that an international fishing schooner race will become an annual event.

The inauguration of the race has been described as a journalistic triumph of the Herald and Mail of Halifax, and that in large measure is true. If those journals had not boosted the idea with characteristic enterprise, its realization would still have been a matter for the dim and distant future. They were largely responsible for the promotion of the sports carnival at Halifax during the first week of October of this year, and for the provincial fishing schooner's race staged at that time. So much interest was aroused in that race, that it was decided to issue a challenge to Gloucester. Prominent citizens of Nova Scotia pledged a matter of \$10,000 or so to meet the expenses of the proposed race, and guaranteed \$5,000 in prize money—\$4,000 to go to the winner, and \$1,000 as consolation money to the loser. A challenge was issued through the columns of the Gloucester Times. At first, it was reported that Gloucester was unwilling to accept. It was claimed that while the Canadian fishing season was over New England vessels were busy and could not spare the time; further it was objected that the Canadians having asked for a race within two weeks there was little time to clean, over haul, and get a vessel in a racing trim. It was then pointed out that while the Canadian schooners had finished their fishing season, they would soon be going coasting or to the West Indies, and could not afford to wait any considerable time for a race.

In a few days the officials of the Gordon-Pew Com-

pany of Gloucester decided that the prestige of New England was involved; and they wired an acceptance of the challenge, and ordered the *Esperanto* prepared for the contest, selecting Capt. Marty Welch, a native of Digby, N.S., to take charge of her. The projected race at once began to crowd the presidential elections for space in the newspapers and a place in popular interest. Making as they are a new bid for the commercial primary of the seas, the Americans were quick to realize that the race offered an admirable opportunity of stimulating popular interest in maritime enterprise, or developing what our own Navy League calls the "sea-conscious spirit". The Governor of Massachusetts took official cognizance of the race; even presidential candidates wired encouragement.

At Gloucester and Lunenburg, the rival craft were prepared for the contest in a furor of enthusiasm, and became the targets of batteries of cameras. Seldom have two ships been made ready for sea by greater numbers of willing friends. Master mariners, city fathers, ministers of the Gospel, helped, or hoped they were helping, to make the racers look spick and span.

The Nova Scotia committee which bore the burden of the work of making arrangements for the race was composed of H. R. Silver, chairman, R. A. Corbett, treasurer, and W. H. Dennis, H. E. DeWolf, R. U. Parker, Andrew Merkle, H. G. Lawrence, W. J. Roue, with Mayor Parker of Halifax, and Capt. Zinck of Lunenburg. These gentlemen, and Mr. Millett, the representative of Gloucester deserve great credit for the admirable manner in which the contest was carried out, and of course, W. C. Smith of Lunenburg, owner of the *Delawana*, and Mr. Carrol of the *Gordon-Pew* Company, owners of the *Esperanto* deserve also much credit for the way they entered into the spirit of the affair.

The great interest taken in the race. The gameness with which the rival crews contended for the mastery and the sporting spirit which presided over the whole affair, evoked interesting comment from the writers for the Boston press. Said James B. Connolly in the *Boston Post*:

"We are satisfied that these Lunenburgers behind the *Delawana* are good sports. Capt. Himmelman was standing on the quarter of his vessel as we were warped in and he hailed a most friendly greeting across to Marty Welch, and Marty, with his bashful smile, hailed just as friendly a one back to him. To bear out the notion that these other people are good sports, I might tell of a little interview with their captain, Zinck, who is Himmelman's friend and representative of this race. I was with Captain Welch when this good old scout Zinck came along.

"Of course, captain, we do not want to beat you too bad," said Zinck.

"No fear," said Marty. "But, look here, I do not know this course. I will need a pilot for the race. Somebody who won't go wrong on the buoys and marks if the weather comes thick. Can you name a good man for me?"

"I could, maybe, but I won't," says Zinck.

"Why won't you?" asked Marty.

"Suppose the man I picked had money on the race, you know that sometimes happens, and you can't tell, the money might be bet against you and then he might lead you astray. But I tell you what, Capt. Welch, the Port Warden knows every pilot in the harbor and

what kind of a man he is. You see him and I bet you he names you a man to trust."

Pilot "Tom" Hayes was the pilot on the *Esperanto* in both races.

Frank P. Sibley, in the *Boston Globe*, in speaking of the finish of the first race, said:

"Patches ashore that looked like odd rock formations turned out to be Halifaxians, who had come down to watch the end of the race. There were literally thousands of them. Long lines of automobiles were parked along the roads; little rises in the land were black with people, and the breakwater itself was closely packed.

"As the *Esperanto* came in, from everything afloat that had a whistler and from everybody ashore that had a voice, there came a conglomerate roar, a salute to a good winner, that showed that the Nova Scotians have plenty of sporting blood, and no National prejudice."

And H. F. Wheeler, of the *Boston Post*, observed:

"The people on the Breakwater, along the water front, the most of them, were losers. But they were game. They joined in the cheers.

"There's a glorious spirit of gameness about the Lunenburgers about all the Canadians."

At the dinner given by the *Halifax Herald and Mail* to the winning crews some speeches were made that are of more than passing interest to the fishing industry. H. R. Silver who presided, expressed his confidence that international races by practical vessels would be a feature of the future.

Lieut.-Governor Grant said that in the race and the meeting of so many from New England and Nova Scotia there had been tied a knot in the golden thread of international friendship that time would never sever. He recalled the great explosion of 1917, and the noble way in which Massachusetts has responded when Halifax so much needed help. "I take off my hat to skippers like Welch and Himmelman," said his honor. It is cheering to know that we can race with that fine feeling which we have seen. This race will popularize the life of the fishermen. He extended his personal congratulations to Captains Welch and Himmelman and remembered with pride the part Nova Scotia had, not only in the losing schooner, but in the man who had so gallantly steered the victor.

Speaking as a Nova Scotian, Premier Murray said he believed this race to have been the greatest sporting event the continent of America had ever witnessed. It was no wonder Nova Scotians took an interest in it, when we remember that from Cape Breton we have a race of fishermen who cannot be excelled. The fishery is a great interest indeed and he congratulated Mr. Dennis in what he had done in organizing the idea of this great race. He hoped some fine writer would put the whole story in book form so that it might be of permanent value to the fishermen of two countries.

W. H. Dennis, in presenting the *Herald and Mail* Cup, emblematic of the blue ribbon of the Atlantic fishing fleets, said in part:—"The majority of people in Halifax and throughout our province realize that this international race has proved a great success, and will prove an asset. It has given our Province tremendous publicity, focusing the eyes of the continent on Halifax, 'The World's Third Most Important Port' and two great Nova Scotia industries. There are few people who object to such contests, people who consider them only sporting events. A month ago there were shrewd business men in Halifax who told the committee

that the fishermen's race was out of bounds of accomplishment and when the International race was suggested their smile broadened. The fact, however, is that within two weeks two of the greatest marine contests ever staged in the North Atlantic, if not in the world, have been successfully and satisfactorily carried out off Halifax, and the resourcefulness of Nova Scotia has won the admiration of the larger majority of the people of Canada and the United States, and today this province is a household word wherever newspapers are read."

"It has been proven that what can be done in Boston, New York, Toronto or in any other city can be done in Nova Scotia by Nova Scotians.

It is unwise for anyone to consider this great International event simply a speed contest between vessels representing the United States and vessels representing Canada. That was not the MAIN object of Mr. Silver and his committee who have been so tireless in their efforts. Neither was it the object of the business men of Halifax who have so generously responded to Treasurer R. A. Corbett's appeal, and promptly responded with upwards of \$5,000. Neither was it the object of the Halifax newspapers which have given publicity commanding attention to this International event. The object has been to give PUBLICITY to Nova Scotia, and those who know are satisfied that Halifax and Province have received during the past two weeks gilt-edged publicity that could not be purchased for \$1,000,000.

"As I said in my introductory remarks, the main object of this International race was not a speed contest, but it takes a great event like this to create enthusiasm and get our people on tip-toes. The asset in Nova Scotia was PUBLICITY, telling the world of our shipbuilding industry and of one of our great natural resources, the fisheries.

"Some DO NOT appreciate the importance of the fishing industry. If the fisheries of Nova Scotia can be kept before the people of Canada and the United States day after day and year after year, the result will be phenomenal. I have information which shows that the people of Japan consume 200 lbs. of fish a year, the people of Great Britain 57 lbs., the people of Canada 39 lbs., and the people of the United States only 19 lbs. The fishing industry of both the United States and Gloucester is now vitally impressed on the minds of the people, and men of the type of Connolly, Hudson, Sibley, Holland, Wheeler, Murkland and others who are representing great newspapers and magazines, who are gathered around this banquet occasion to refer to this event, and the fact that this is a board today, will in weeks and months to come have perpetual trophy and is to be contested for each year, will keep our fishing industry a live topic.

"If by publicity we get each person in the United States to eat two pounds of fish in excess of their present quota of nineteen pounds, Nova Scotia will have a market right at her door for the entire fishing catch, and we will not have to search the Seven Seas for favorable trade conditions.

"Yes, Gentlemen, the International race, if taken advantage of, was well worth while, and if it is kept in the channels of clean sport and confined to staunch seagoing fishing craft will be an institution that we will be proud of in years to come."

Mr. Carroll, on behalf of the Gordon-Pew Company, owners of the Esperanto, accepted the cup, which

stood in front of the chairman at the head of the table. In doing this Mr. Carroll said that no better master or crew ever sailed out of any harbor than Welch and his men. He paid at the same time a tribute to Himmelhan and his crew, and remarked that it was an honor to win from such men. They had given him some anxious hours yesterday. The two crews were a credit to two nations. Speaking of the failure, Mr. Carroll said that if we begin to build freak boats in order to win all the good that had been accomplished by the race would have been done away with. For his part he proposed to build only ships for utility. We appreciate our reception here, said Mr. Carroll, and we'll be back next year.

Immediately afterwards Mr. Carroll presented to Captain Welch a silver loving cup offered by Colonial Fisheries Company, of Boston, Mr. Duffy manager. The cup was accepted by the Esperanto's captain and then there were cheers for Captain Welch and Captain Himmelman.

Mayor Brown of Gloucester, said Gloucester and the whole country appreciated what Halifax had done. The bond of friendship would be cemented by this race more firmly than ever. We will be back from Gloucester next year and then you can come to us when we will return the favors but, of course, we will keep the cup. (Laughter.)

J. B. Connolly of Boston, one of those here to write up the race, said that he had written the America's cup races and could say that they were not in it in interest with this race. He ventured to say that there had been ten times the popular interest in this cup as compared with that in the America's cup.

Already a company is being promoted in Nova Scotia to build a schooner which will be employed in the fishing industry, but will, it is hoped, bring the cup back to Canada next year.

HON. MR. BIGGS TO HAVE CHARGE OF FISHERIES.

An important change in the Provincial Government has been announced in the transfer of the Department of Game and Fisheries from the supervision of Hon. F. C. Biggs to that of Hon. Harry Mills. Hon. Mr. Biggs primarily had the Department of Public Works and Highways to look after, while Mr. Mills has been responsible for the Department of Mines only. The Highways Department has increased five or six times the amount of work connected with it since Hon. Mr. Biggs took it over and the Premier thought it only fair that he should be relieved of one of his three departments to give more of his time to the highways. The Department of Game and Fisheries will show about \$100,000 more of a surplus this year than ever before, it is stated.

Calls for cheap fish.

Manager Jenkins of the London, Ont. fish market, which was opened during the war to sell fish supplied by the Ontario Government as a means of supplying cheap food, declares that the Government is now commercializing its fish business instead of remembering that it should use the fish as a regulator of living costs. He says that repeatedly the city has tried to buy fish from the Provincial authorities, but that none could be procured, because it is being sold at the highest prices obtainable.



Process of Freezing Fish in France

By COLIN McKAY.

The Scientific and Technical Bureau of the French Fisheries Department has been carrying on experiments with various methods of freezing and simple refrigeration at Lorient, of which the results were recently made public in "La Pêche Maritime." The first freezing process may be briefly described. After being washed in fresh water at a temperature of 0 degrees centigrade (freezing point) the fish are immersed in brine with a salinity of 20 deg. B., and of a temperature of—17 degrees Centigrade. The duration of immersion is 1 hour for fish under 1 kg. (2.2 lbs.); 1½ hrs. for fish between 2 and 3 kg.; 2 to 3 hours for fish of more than 3 kg. The fish are then placed in cold storage chambers where the temperature is kept at 8 to 12 deg. C. Limits of time before consumption were established varying from 20 to 50 days, according to the kind of fish. For soles and whiting the limit was 22 days; for mackerel, either gutted or whole, 25 days; for hake, gutted, 40 days, and whole 35 days; for haddock, gutted, 37 days, and whole, 30 days.

The second process, applied to fish under 5 pounds, involved immersion in a mixture of melting ice and salt, maintaining a surplus of ice and salt so as to produce a temperature of —10 deg. C. After 5 hours immersion the fish are placed in cold storage and kept at a temperature of from —2 deg. to 8 deg. C. The limit of time before consumption is several days less than for fish treated by the first process.

The third and fourth processes combinations of the first two. The fifth process, applied to fish over 2 pounds, consists of the first process, and the immersion of the fish in fresh water, which is frozen in blocks. The blocks are then put in cold storage where a temperature of —2 deg. to 8 deg. is maintained. In this way some fish were conserved in good condition for 50 days.

M. Le Danois, director of the these experiments, comments in effect: The first process is simple, and the labor relatively small; but the cost of maintaining the temperature in the storage chambers at —8 deg. or —10 deg. is considerably. This, of course, applies to France; in cold countries it is different. The cost of salt is an important item, and only a limited quantity of fish can be immersed in the pickle tanks at one time.

The second process makes the fish too salty for the taste of some people.

The third and fourth process emulates the disadvantages of the two preceeding. The fifth process appears to be the best, because the fish, while in cold

storage only require a temperature of —4 deg. — and that means a considerable economy. The disadvantage is that if the temperature becomes less than —4 deg. C., the salt in the fish is liable, after a time, to rupture the block of ice.

Simple Refrigeration.

M. Le Danois describes two methods of simple refrigeration tried out at Lorient. In the first, the fish, after being washed, are immersed in sea water, maintained at a temperature of —2 deg. C. The duration of the immersion is 1 hr. for small fish; 1½ hrs. for fish of 1 to 3 kg.; 2 to 3 hr. for fish of over 3 kg. The fish are stored in chambers where the temperature is kept at —1 deg. to —4 deg. C. Limits of time, before consumption for fish so treated varied from 25 to 40 days, gutted or whole.

The second process, applied to fish under two pounds, consists of immersion in fresh water at a temperature of 0 deg. or —1 deg. C. for three or four hours, the fish being laid on movable gratings of wood. After immersion the fish are stored in chambers and kept at a temperature of —1 deg. to —4 deg. C. The limit of consumption is about 20 days. Fish chilled in fresh water decompose more rapidly when taken from cold storage than fish chilled in sea water.

What conclusion emerges from a comparison of the methods of congelation and refrigeration; asks M. Le Danois, and answers. The fish frozen by the first process (the best) is absolutely rigid when taken from the bath, but freezing to the heart is only obtained after prolonged sojourn in very cold chambers. In an establishment which is able to maintain a continuous temperature of —8 dg. C., the fish can be conserved from one reason to another.

With the first process of refrigeration (also the best) the fish is supple when it leaves the bath, and refrigeration is only superficial. It hardens in cold storage. Placed in a chamber, maintaining a temperature of —2 deg. to 4 deg. C., it can be conserved for two months at the most.

In a station with limited power, such as that of Lorient, we see that the period of conservation is sensibly the same for congelation as for refrigeration. But we established these propositions:

1. With fish of the same species, those of large size, can be conserved longer than the smaller ones.
2. The fish of the same family can be conserved for the same period.

3. Fish intended for congelation must be very fresh.

4. Removing the entrails and the head is indispensable when the fish are over a kilo, these being the starting point of infection and the home of germs.

It is absolutely false to say that fish thaw out and go bad as soon as they are removed from cold storage, observes M. Le Danois. When thawing fish preparatory to cooking it is advisable to observe the following rules: If the fish is frozen to the heart it should be placed on a board or in a pail, resting on a block of ice, and left exposed in a chamber with a temperature of +5 deg. to +7 deg. C., or 40 deg. to 45 deg. F. It is advisable that the thawing-out be as slow as possible. If there is need of haste, the fish should be put in cold water for

some hours, but never in tepid water. With refrigerated fish the same process should be employed.

Thawing in air is always preferable to water, and small fish should never be plunged in water; the fish can be cut up without inconvenience before they are completely thawed. After being thawed out the fish can easily be conserved for 24 hours in a temperature of +15 deg. C., or 60 F.

When the fish are in cold storage and an accident occurs to the refrigerator machinery, the introduction of a little ice will usually suffice to prevent damage. And when it may be discovered that the fish are showing signs of decongealing, lowering the temperature a few degrees below the normal for a short time will restore them to a proper condition.

The Standardization of Names of Fishes

On September 22 and 23 there was held in Ottawa under the chairmanship of Mr. Found, the Assistant Deputy-Minister of Fisheries, a meeting for the selection of further standard names for fishes. There were present representatives of the United States Bureau of Fisheries, the Biological Board of Canada, and the Canadian Fisheries Association, and latterly also a representative from Newfoundland. In the following cases (not hitherto settled internationally) which came up for consideration, it was agreed to adopt the names that are indicated, and to press for their general use.

It is to be noted that the names selected for the five Pacific species of salmon are substantially those adopted provisionally by resolution of the Convention of the Canadian Fisheries Association at Vancouver in June and published in the June issue of the Canadian Fisherman.

It had previously been agreed that small flatfishes (Pleuronectidae) in general might be called flounders,

and that, whenever distinctive names are used, *Limanda ferruginea* should be called Dab, and *Glyptocephalus cynoglossus*, Witch. It has now been further agreed that when distinguished from flounders in general, the genera *Liopsetta*, *Platichthys*, and *Hippoglossoides* shall be called Plaice, and that the species *Hippoglossoides platessoides* shall be called Canadian Plaice. It is to be expected that the other plaice will later be given qualifying names, as for example—Smooth plaice for *Liopsetta*, Starry plaice for *Platichthys stellatus*, etc.

The last seven names have been selected for different genera of the family of suckers, the name Sucker itself, having already been adopted for species of the genus *Catostomus*. In this family the most important decision has been that of adopting the name Lake Mullet for species of the genus *Moxostoma*, large quantities of which have been marketed from the lakes of the central part of the Dominion in recent years.

Current Names.	Scientific Name.	Trade Name (or Names) selected.
Sockeye, Saw-qui Alaska Red, Blueback Salmon	<i>Oncorhynchus nerka</i> .	Sockeye or Red salmon with a preference for Sockeye.
Silver, Silversides, Cohoe Medium Red Salmon.	<i>Oncorhynchus kisutch</i> .	Cohoe or Medium Red salmon, with a preference for Cohoe.
Spring, Chinook, Tyee, King, Royal Chinook Salmon, Quinnot Salmon.	<i>Oncorhynchus tshawytscha</i> .	King or Chinook salmon with a preference for King.
Pink, Humpback Salmon, Dog Salmon.	<i>Oncorhynchus gorbusha</i> .	Pink Salmon.
Chum, Qualla, Keta Salmon, Dog Salmon.	<i>Oncorhynchus keta</i> .	Chum Salmon.
Sand Dab, Long Rough Dab, Flounder, Plaice.	<i>Hippoglossoides platessoides</i> .	Flounder or Canadian Plaice.
Smooth flounder, Eelback.	<i>Hippoglossoides</i> sp.	Flounder or Plaice.
Arctic flounder, Plaice.	<i>Liopsetta putnami</i> .	Flounder or Plaice.
Great flounder, starry flounder, plaice.	<i>Liopsetta glacialis</i> .	Flounder or Plaice.
Carp Sucker, Lake Carp.	<i>Platichthys stellatus</i> .	Flounder or Plaice.
Blackhorse, Suckerel.	<i>Carpoides</i> sp.	Carp sucker.
Creek-fish, Chubsucker.	<i>Cycleptus</i> sp.	Blackhorse.
Buffalo-fish, Buffalo	<i>Erimyzon</i> sp.	Chubsucker.
Winter sucker, spotted sucker.	<i>Ictiobus</i> sp.	Buffalofish.
Red-horae, white sucker, Mullet.	<i>Minytrema</i> sp.	Spotted Sucker.
	<i>Moxostoma</i> sp.	Lake Mullet.
	<i>Placopharynx</i> sp.	Lake Mullet.



Report of Provincial Fisheries Department for 1919



The Hon. Wm. Sloan, Commissioner of Fisheries, has just issued the report of the Provincial Fisheries Department for the year 1919, which he placed before the Legislature in April last. Its publication has been delayed owing to the press of work in the hands of the King's Printer. The report and its appendix deals at length with the commercial fisheries of the Province, especially its salmon fisheries, contains reports from the salmon spawning grounds of the leading salmon producing rivers, a valuable contribution on the life-history of the sockeye salmon, a memorandum by Wm. Sloan respecting the salmon fishery regulations and a special paper on the "Fraser River Salmon Situation—a Reclamation Project" by Mr. Babcock, the Commissioner's Assistant.

The value of the fishery products of Canada for the year ending December 31st 1918 totalled \$60,250,514, as against \$52,312,044 for the preceding year, notwithstanding that the latter was considerably greater than in any preceding year. During 1918 British Columbia contributed fishery products of a total value of \$27,282,223, or 48 per cent of the total for the Dominion. As in recent years, B. C. again led all the Provinces of Canada in the value of her fishery products. Her output for 1918 exceeded in value that of Nova Scotia by \$12,139,157 and exceeded that of all the other Provinces combined by \$9,456,968. Salmon products totalled \$17,207,245, halibut \$5,196,539, herring \$1,742,757, and whales \$1,382,278. In all some twenty species of food fish were marketed besides clams, crabs and oysters.

The salmon pack for the year 1919 totalled 1,396,156 cases. It was 223,000 less than in the record year 1918. The total of all grades of salmon on the Fraser River system in B. C. waters in 1919 totalled but 163,123 cases. The catch of sockeye contributed but 34,068 cases or 38.1-2-2 per cent less than that of the brood year 1915. The catch of sockeye in American waters of the Fraser system gave a pack of but 64,346 cases, as against 87,465 cases in its brood year 1915. The pack of sockeye in the entire Fraser system was but 98,414 cases, as against 178,595 cases in 1915, a decline for that cycle of over 50 per cent, and, the report states, further demonstrates that the runs of sockeye to the Fraser River system are "perilously near extermination".

The reports from the spawning-beds in 1919 show that there were less sockeye on the beds of the upper section of the Fraser than in any former year, and that there were a greater number of sockeye in the Harrison-Lilloet lakes section and the lower Fraser than in recent years. Mr. Babcock, who made the inspection of the Fraser, attributes this increase to the work of the hatcheries in 1915. In his report Mr. Babcock reviews conditions in the canyon of the Fraser at Hell's Gate, and states that the reports that the river's channel there is still so blocked as to prevent the passage of sockeye to the waters above, and that

the sockeye that reached there in 1919 did not get through, is untrue. He says:—All the sockeye that reached there passed through the canyon without more delay than often occurred before the slide of 1913. Conditions at Hell's Gate since 1914, when the channel was cleared, have been and are now as favorable for the passage of all species of salmon as they were previous to the slides of 1913 and 1914."

The report deals at length with the halibut fishery and shows that the catch in 1919 totalled 19,198,565 lbs., a gain over 1918 of 2,501,565. In commenting on the Canadian-American halibut treaty signed in 1919, and now before the United States Senate, the report takes exception to the inadequacy of the closed season provisions of the treaty. Instead of having a closed season for all fishing for halibut by Canadian or United States vessels, the report advocates that the known halibut banks of the Pacific be divided into six districts which should be alternately closed for five years, in such manner that some of the banks would at all times be open to the fisherman. The argument advanced in sustaining this position is based upon the results of the special investigations which were made for the Department by Wm. F. Thompson, report of which was published in the Department Report for 1916.

The appendices of the report contain Dr. Gilbert's sixth contribution of the Life-History of the Sockeye Salmon, which deals with data collected from the sockeye runs to the Fraser, Skeena, Naas Rivers and Rivers and Smith Inlets. The outstanding feature of his examination of the scales collected from the Fraser in 1919 was the remarkable series that passed in procession during the season. The run of 1919 was peculiar in comparison with each of the previous eight years' runs in the distinctness of these components of the run. Apparently fewer types were represented than has been the case in previous seasons, or if represented, then by fewer individuals, which did not confuse the characteristics of the race which was dominant in that part of the run. Whereas in other years it has been a rare occurrence to find in any period of the run a race unmixed with any other and appearing homogeneous, the impression during 1919 was a succession of such occurrences, in each of which one race strongly predominated, even if not wholly without mixture. Such an apparent paucity of races can only find explanation in the practical extermination of the run to certain tributaries, which even in the depleted condition of the river during the last decade have until now furnished their quota. The succession of racial forms which appeared in the main run, either in the sea approaches to the river or in the main channel of the latter, are most readily detected by characteristics shown in the central or nuclear area of the scales, which records the growth of fry and fingerling salmon in fresh water. The growth in the different lakes differs materially, and the size of the year-

lings at migration in the early spring is an index of the favorable or unfavorable conditions under which they have been nourished. The smaller size have at migration smaller scales and these are marked by fewer lines. In the adult, therefore, the size of the nuclear area and the number of rings which this area contains, serves as a measure of the size of the fingerlings, and thus enables us to sort out the races which have differed in amount of growth during the first year.

Another fact emerges from data collected from the 1919 run. It produced the smallest sockeye of which we have any record on the Fraser.

In his analysis of the data collected at Rivers Inlet during 1919. Dr. Gilbert finds that the present conditions there are fast developing into one of pronounced danger. He shows that the runs have during the past four years dwindled to little more than half their size, and that we are no longer justified in classing the recent poor years with the fluctuations which occurred in previous cycles. In commenting on general conditions at Rivers Inlet Dr. Gilbert states "Unless the intensity of the fishing is at once diminished, unless we decrease the total number of sockeye taken annually from this watershed, we are in danger of repeating there the tragic history of the Fraser River."

Copies of the report may be obtained by application to the Hon. Wm. Sloan, Commissioner of Fisheries.

SUMMARY OF REMARKS.

Mr. Arthur Boutilier, President and General Manager of the National Fish Company, Halifax, delivered a very logical and powerful speech at the recent meeting of the Tariff Commission held at Halifax against the Government's proposed removal of the tariff on the importations of American fish into Canada.

Mr. Boutilier pointed out that the Government for a number of years past had directed their efforts by express subsidies and by a great campaign of national advertising to promote the increased consumption of fish products by the people of the Dominion of Canada generally. The Government's efforts have also been supplemented by those of the wholesale fish concerns of Nova Scotia, who had operated to that end and it was on the understanding that no change in the tariff would be made that all the fisherman of Nova Scotia had bought equipment, boats and fishing supplies, sure in their knowledge that they would always be able to obtain a market for their fish. As 90% of the production of the Nova Scotia wholesale firms is for Canadian consumption, the Government's intention now was to destroy this home market, which they had so largely assisted in developing, by removing the duty. Mr. Boutilier then went on to point out that the geographical situation of Canada and the United States makes Boston, Portland and other fish centres on the American Coast the logical source of supply for Montreal and the large Cities of Upper Canada and that this handicap in order to be overcome should be met not by lowering the duty, but rather by increasing it. He pointed out further that if they were going to remove the duty on fresh fish, that before doing so it should be a matter of mutual agreement that the United States in turn would take off the duty on smoked and other varieties of manufactured fish which exists and is in effect against Canadian products going into the United States. He

urged the Tariff Commission to consider the matter very carefully and to compare seriously the advantages. The advantages as they appeared to him were that a few of the larger retailers might get the advantage of buying fish at a cent or two a pound cheaper than Nova Scotia fish firms could supply the same, but that it would be very doubtful whether the price of same to the consumer would lower in proportion the reduced buying cost. On the other hand, were not the fishermen of Nova Scotia and their dependents, as well as other industries connected with their success for a livelihood and who number practically 25% of the total population of Nova Scotia, a much more important factor to be considered in the situation than the immediate advantage accruing to a small number of retailers. After all, there was no assurance that once the American producer had captured the Canadian market, after having dealt a death blow to the Nova Scotian concerns, that the retailer would continue to benefit by lower prices. Rather, in his opinion, it would be that captured and obtained control of the market that in the end prices would be higher than they were now.

Prince Edward Island Notes

By PAUL.

Smelt gill net fishing, which opened on the 15th. October, proved to be very profitable, as excellent catches were made the first day. The fish running extra large in size. Unfortunately, the high cost of transportation does not warrant sufficient remuneration to fishermen to encourage them to continue fishing, specially with the price rather low, due to the very fine weather which we are having.

Oyster fishing has been exceptionally good in Kildare River; this being about the only river, west of the Island, where the oyster is to be found. This Kildare oyster has a fine flavor, but a very brittle shell, making it difficult for transportation. It is deplorable to note that some disease which proved fatal to the oyster, has depleted the world famed Richmond Bay Oyster, as well as the oysters in Hill's and Mill Rivers. The above named rivers and bay were very productive of this excellent bivalve, and their destruction is a serious loss to the fishermen.

Cod fish were very plentiful on the North shore of the Island, during all last week and the week before. The fish running very much larger in size, this season, than former years. The price, unfortunately, is so low and the cost of fishing gear so high, that few fishermen avail themselves of the abundance of the cod-fish, which, at this usual time of year, is near our shore.

Advice from Norway and Sweden indicates a slight raise in price for lobsters, particularly the prime quality. Many packers have still the most of the season's pack on hand, waiting for a price sufficiently high to warrant, at least, a meet of revenue with expenses.

Very few fall herring have been caught, up to now, in our Gulf waters.

Lady (to maid)—"Did you put in fresh water for the goldfish?"

Maid—"No, mum, they ain't drunk up what I gave them yesterday."



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building., Vancouver, B.C., Canada.

Mr. JOHN McHUGH RETURNS FROM INSPECTION TOUR OF NORTHERN B. C. FISHERY DISTRICTS.

After a month's trip of inspection in Northern B. C., Mr. John McHugh, Resident Engineer of the Dominion Fisheries Dept., returned to Vancouver the first part of November. During his trip Mr. McHugh inspected many streams to observe the obstructions, which consist mostly of rocks and logs. The streams inspected were mainly on the islands in the vicinity of Prince Rupert. The work in connection with the removal of the obstructions will be undertaken in 1921, and it was with this end in view that Mr. McHugh made the inspection at this time. This will enable the department to lay out the next year's work. He also visited and inspected the new hatchery at Lakelse, which he found practically finished and a good supply of fine eggs on hand. Mr. McHugh, on his trip of inspection, has without doubt, travelled many miles through British Columbia over sections that have never been traversed before. He has seen inlets along the coast that from the entrance appear to be nothing but small streams but once you pass through you find beautiful large sheets of water. Veritable inland lakes of large dimensions. His observations are that the thousands of small streams along the coasts of British Columbia are much more important than has ever been realized. It is the care of these streams which will mean so much to the fishing industry in the future. The fund of knowledge which Mr. McHugh has obtained on his many trips will prove invaluable as time goes on.

LAKELSE HATCHERY HAS A GOOD SUPPLY OF SCKEYE EGGS.

Practically 7,500,000 sockeye eggs all in good condition is the result of operations at the Lakelse hatchery this season. With a capacity of 10,000,000 eggs this season's work at the hatchery is very good taking everything into consideration.

Lakelse hatchery was constructed under adverse conditions. With a twelve mile haul over the road from Terrace, a station on the G. T. P., the problem of building supplies being landed at the site of the hatchery

was anything but encouraging. Labor conditions to say nothing of climatic conditions were added problems, but these obstacles have all been surmounted, and the Lakelse hatchery will be the most modern hatchery in British Columbia when completed. The building of the hatchery has been difficult and expensive owing to conditions above noted, but the effort will without doubt bring ample returns in future years to make up for the outlay of money, and effort.

This hatchery will contain everything which will assist in its successful operation, and arrangements are made for retaining ponds to hold the young fry until they are one year old. This is in line with the department's idea of doing everything possible to have its hatcheries prove successful in assisting nature in the propagation of the salmon.

Mr. James Catt is superintendent of the hatchery and he has a crew of six men to assist him.

Lakelse hatchery is on Trout Creek a tributary to the Skeena River, and twelve miles from Terrace a station on the Grand Trunk Pacific Ry.

LATEST REPORTS FROM HATCHERIES OF B. C. ARE MOST ENCOURAGING.

Returns from the various hatcheries throughout the province of British Columbia show that the additional eggs secured over the previous years is way ahead, and all natural spawning beds have been exceptionally well seeded.

One of the most noticeable improvements is the Fraser River watershed.

The Pemberton hatchery has 25,500,000 eggs, which is way ahead of last year's egg take.

This confirmation of previous estimated reports is most encouraging to those concerned in the industry, and points to conservation getting in its work on both ends both the natural and artificial.

Ottawa, Oct. 21.—The total pack of sockeye salmon on the Naas River, B.C., for the season of 1920 is 15,356 cases, which is about one-half the usual pack of this variety on the Naas. The pack of other varieties on the same river total 63,761 cases, making a grand total pack of 79,117 cases.

VISITS OTTAWA ON OFFICIAL BUSINESS.

Col. F. H. Cunningham, Chief Inspector of Fisheries, accompanied by Mr. J. A. Motherwell, Asst. Inspector of Fisheries, left for Ottawa on official business the middle of the month. Matters of importance to the salmon and fishing industry of British Columbia will be taken up with the department while they are in Ottawa.

THE FISH OIL MARKET.

British Columbia fish rendering plants are up against a stagnant market as regards fish oil. The price is low, and buyers do not seem inclined to purchase any quantity. The result is that the producer is compelled to hold what he has on hand or sell at practically a loss. This is not at all encouraging for the development of this branch of the industry, and some method of marketing should be planned which would enable those who are attempting to develop it to do so at a minimum of risk.

CIVIL SERVICE HITS FISHERY DEPARTMENT.

That the ruling of the civil service commission is causing a feeling of unrest and dissatisfaction in the Department of Fisheries is quite evident. The Geological Survey was without doubt the hardest hit of all the departments but the Fisheries Department is also beginning to feel the effects also, and there should be some way out of the unbusinesslike method of adjusting salaries of trusted and capable employes in these departments. Under present conditions there is no incentive for any employee to plan on the Fisheries Department as a department in which to give his best effort. There is nothing ahead, and in some instances inferior positions will pay more than positions above. The writer knows of one instance where a man with exceptional capabilities was offered a position which would allow of his developing a certain branch of the department to the highest degree of usefulness, but the salary was no better than that which he was already receiving and he would have the additional responsibilities of the new position.

Some way out of this muddle should be discovered as the several government departments are going backward instead of forward when such conditions are fostered.

NEW CARRIER FOR ALASKA RUN IS PLACED IN OPERATION BY NEW ENGLAND FISH CO.

Beginning Nov. 3rd the New England Fish Co. inaugurated an all the year round freight service between Vancouver and Alaska, when their new carrier the "WASHINGTON" left Vancouver for the North.

Recently purchased by the Company in Seattle, the Washington will be operated under United States Registry on the North run carrying fish South and freight North to the fishing stations in Alaska.

Built in 1914 at Dockton, Washington, the Washington which is a wooden vessel, was formerly used as a passenger steamer on Puget Sound. Her owner died and the vessel was purchased by the Union Steamship Company, of Vancouver, and she was brought here and laid up for two years. Finally her machinery was

taken out of her and put in the Union Company's new steamer Capilano. Captain Judy, of Seattle, bought the hull and took it over to Seattle, placed semi-diesel engines in it, also transformed the vessel into a freight carrier. The hull is in first class shape and just the carrier for the service for which she is to be used.

The Washington's measurements are: Length, 135 ft. overall; beam, 26 ft.; depth, 16 ft.

Capacity about to 300 tons.

Powered with a C. O. Fairbanks semi-deisel engine.

Hoist engine, Fairbanks auxiliary.

Crew of eight men, including captain.

Accommodation for a larger crew if necessary.

Cabins are all steam heated, and modern in every respect.

Capt. Jennings, one of the most experienced Alaskan Skippers will command the Washington. Capt. Jennings was former Captain of the steamer Dora which carried the mails from Valdez to Aleutian Island ports.

SALMON FISHING SEASON OVER.

The salmon fishing season is over. The results cannot be grouped into one average as they varied so in the different districts. In the Rivers Inlet district there were very good results for the fishermen and canneries, as the sockeye run was something out of the ordinary. The fish were larger than usual and the run far exceeded expectations.

Farther North the season was much shorter than usual as most of the canneries did not attempt to put up the quantity of pinks that they usually pack, and practically no chums were packed in the Northern part of the province.

On the Fraser River the run of sockeyes was larger than for some years and the fisherman made good money as the price of the fish went as high as \$1.00 per fish. At this price the canner did not have much chance to clean up a profit even at \$20.00 per case. On the other hand the market for chums and pinks was not as large as usual and the result was the fisherman did not get very high prices for what he did sell. Very few chums were packed and neither were there many frozen. The U. S. buyers were noticeable by their absence this season.

On the West Coast of Vancouver Island the season was not a profitable one to the fishermen as far as large profits go. There were no U. S. buyers for the fall salmon although they were there early in the year and boosted or helped to boost the price of spring salmon, and the trollers made good money on what spring salmon they caught this year, but the amount of fish caught was not up to 1919. The weather was bad a good part of the time which prevented the fishermen getting in full time. Taking it all in all it has been a very uncertain year all through and it is to be hoped that conditions may be more settled and regulations all made long before the fishing season opens in 1921.

FRASER RIVER CLOSED FOR NOVEMBER AND DECEMBER.

Beginning Nov. 9th, the Fraser River will be closed to salmon fishing until Dec. 31st. This ruling is in accordance with the order in council enacted in 1917, and during this period no salmon nets may be placed in the river for fishing.

MISSING MEN FROM WRECKED "JAMES CARRUTHERS" ARRIVE SAFE AND SOUND.

The American halibut schooner "Idaho" arrived in Prince Rupert on Oct. 16th with the four missing members of the crew of the steamer "James Carruthers," which was sunk thirty miles from Prince Rupert in a collision with the U. S. S. Surveyor. The men were Alex. Murray, George Anderson, James Mansfield, and Cathen Kerr. Their first enquiry when rescued was for the rest of the members of the crew. These four left the steamer in a dory which stood the terrific seas wonderfully well. They were all in good physical condition, and their many friends were greatly relieved to hear of their safe arrival sound and well.

TRAWLER "JAMES CARRUTHERS" WILL NOT BE A TOTAL LOSS.

The Canadian Fish and Cold Storage Co., Ltd., have had a gang at work on the wreck of their boat the "James Carruthers," and it has been found that the vessel can be floated. The "James Carruthers" was sunk thirty miles from Prince Rupert in a collision with the "U. S. S. Surveyor," and it was thought at first that the Carruthers would be a total loss, but now work has progressed so rapidly on the vessel that it is expected she will be in Prince Rupert and on the ways at an early date.

LARGE SHIPMENTS OF CANNED SALMON FOR THE U. K. AND EUROPE.

During the last part of October approximately 60,000 cases of canned salmon left Vancouver on different steamers for London, Hamburg and Rotterdam. Just before the coal strike was talked of in Great Britain there were some heavy shipments of canned salmon to the U. K. and Europe. On Oct. 22 and 23 the following shipments went forward: The steamer Kinderdijk of the Holland Amerika Line loaded 12,000 cases for London and Rotterdam. The Harrison Direct Line steamer "Orani" came to Vancouver to load 21,000 cases for London, Hamburg and Rotterdam. Had there been no talk of the coal strike taking effect there would have been more canned salmon going forward, and just as soon as matters are in a more settled condition in the U. K. there will be a heavy out go of canned salmon to the U. K. and Europe.

SALT FISH FROM THE EAST ARRIVES IN VANCOUVER.

The first car of salt fish from the East to arrive in Vancouver since last Christmas reached the city Nov. 4th. The car contained herring, mackerel, dry salted whole cod and boneless cod in bricks. There was a keen demand for the fish, and the car was disposed of in a short time.

FRESH HALIBUT PRICES CLIMBING ON PACIFIC COAST.

During the past six weeks, there has been a steady increase in the price of halibut, and during the week beginning Nov. 8th the price at Prince Rupert reached 14c for chickens and 23c per lb. for medium, while Seattle prices were within a cent a pound of this price. Vancouver only received a few small catches.

Scarcity of fish owing to bad weather was the principal factor in this rise in price.

LARGE PACK AND DRY SALT CHUM SALMON.

For the first time in several years there has been a large pack of dry salt chum salmon put up this season for the Japanese and Chinese markets. Only when these fish are obtainable at low prices are the Oriental packs at all large. This season very few of this variety were canned or frozen. In fact not as many were caught as usual owing to the extremely wet weather, which permitted to fish to get to the spawning grounds with much more safety than usual as the waters of the rivers and creeks were abnormally high. There is no estimate as to the quantity as yet although figures will be available soon now that the season is about over.

THE ORIENTAL SALT HERRING PACK, IN BRITISH COLUMBIA.

With probably one of the best graded packs of dry salt herring ever packed in British Columbia, and practically all a white man's pack the producers are faced with an uncertain market. This is accounted for in several ways but probably the most reasonable explanation is that the buyers of the dry salt herring in the Orient have been mis-lead as to the actual amount really packed so far this season and what is likely to be the actual amount packed, for the entire season. It has been reported that as high as 50,000 tons would be the pack for the season, but this amount is altogether too high, and a more reasonable amount would place it at approximately 25,000 tons. Last season there was somewhat of a scare thrown into the skippers by the drop in prices and trouble in securing acceptances after arrival at Shanghai near the end of the season. For this reason alone the pack this season will be less than last. There is a strong endeavor to control the dry salt herring pack both as to quality and stability of price. Much money has been lost in past years by the careless methods used in packing and by packing fish that should never had been packed, especially late in the season. The tendency is to use a chop mark, and build up a trade on the strength of quality. This can be done, and if the producers will work together along the right lines this branch of the fishing industry on the Pacific Coast may be one that will give rich returns. The right kind of methods in marketing the fish is another matter that should receive careful attention. In past seasons, there have been altogether too many profits divided before the fish reached the consumer. The producers should get as close to the consumer as proper distribution facilities will allow. Two or three handlings of the fish before they reach the Orient is not business. There is too much of the speculative element entering into the transaction to help build up a strong branch of the industry. Without doubt the new white firms that are now producing the packs will see that this element which has held sway in the past is dispensed with in the future. It is for their own good that it should be done away with. Direct representation in China will enable them to secure the proper contracts and assure proper handling of their interests at that end. It is well known that once the Chinese firms know they will be given a square deal that they will do business for all time with the same firm.

Now as to the conditions as they are at present. Without doubt the very fact that so many have had a finger in the endeavor to handle some of the dry salt pack this season accounts for the uncertainty in the

buyers minds as to the real conditions. It is well known that one lot of this seasons pack passed through two hands other than the producers before they were shipped, and each one made a profit. It would be much better to make a fair profit for the producer and cut out the speculative element with the idea of giving the buyer a square deal and stabilizing the market for all time than to have an uncertain market before they pack it up. Devise some method that will assure the buyer of a fair estimate of the amount of the pack, make a proper price, and it will be a long step toward the making of a sure market for the Oriental pack of dry salt herring.

A COMPARISON OF FREIGHT RATES.

The rate for the transportation of dry salt herring from Barclay Sound, on the West Coast of Vancouver Island, by steamer, to Vancouver is \$5.00 per ton. This would consist of 4 boxes of herring approximately 2,000 lbs. The rate from Vancouver to the Orient is \$10.00 per ton, and this consists of 5 boxes of dry salt herring, as this is figured on a measured ton. Taking the distance into consideration and the extra 500 pounds carried, the question that is bothering the shippers of this commodity is: "Why is there such a discrepancy in the rates?" The question of rates from the West Coast of Vancouver Island has been a live one for some time past, and this latest development is of interest to all concerned. It may mean the loading of the entire pack on the Oriental bound steamer at Barclay Sound.

THE CANNED SALMON MARKET.

Just now it is between seasons, and with conditions as they are no one is inclined to quote any prices. The buyers are not anxious and the sellers are waiting. Indications are that the supply of pinks that have been on the European market and in the U. K. during the past year or two are pretty well cleaned up. There is little doubt that this being the case shipments of this variety will be pretty regular just as soon as there is a surety of settled conditions in transportation in the U. K. As noted in another item about 60,000 cases of canned salmon left Vancouver for London, Rotterdam and Antwerp during October, and other shipments will probably follow as soon as there is steamer space available. There is not that feeling of discouragement manifested among the packers that one would expect, as they seem to have the idea that they can wait and will wait until matters adjust themselves, which is expected to take place around about the beginning of the year. As a matter of fact this season of the year is nearly always quiet.

CANNED HERRING AND PILCHARDS.

Canned herring are being quoted at \$6.00 per case, and pilchards at \$5.50 per case. It is impossible to give an accurate estimate of the herring pack, but there are estimated to be 100,000 cases of pilchards packed. There is a regular call for both of these varieties, and although the movement is not heavy just now there is something doing.

CRAB CANNERIES STARTING UP IN B. C.

It is practically certain that there will be at least two crab canneries in operation in Northern British Columbia before the end of the year. The fisherman will have more to report on this later.

GOSSE-MILLARD PACKING CO. SELL BAIT TO THE WEST COAST FISHERMEN.

With a clearing officer stationed at their San Mateo cannery on Barclay Sound the Gosse-Millard Packing Co., Ltd. were able to supply the American halibut fishermen with ice and bait during the past season. The ice making plant is capable of taking care of all requirements and by next season they will have facilities to handle more frozen fish if necessary. They also have a well equipped store at the cannery.

VANCOUVER WHOLESALE MARKET.

Local cod has been bring 10c per lb. and a fairly good supply.

Local Soles are selling at 10c and a fair supply.

Smelt are off the market.

Herring have been arriving irregularly, and what have come in brought about 5c per lb. Mostly Pender Harbor Stock.

Fresh Salmon is off for this season.

SHELL FISH MARKET IN VANCOUVER.

Crabs are plentiful but with an unusual demand, the market is kept clear of any left over.

Shrimp are in good supply and are bringing 21c per lb.

Clams are selling at 4½c. per lb.

HIGH FREIGHT RATES DRIVE SHIPPERS TO WATER TRANSPORTATION.

The mines of British Columbia are shipping ore to New York by water, which formerly went by rail. High rail rates did it. Canned salmon are being shipped by steamer in large quantities than ever. Part of this is due to a great saving in rates.

CONFERENCE AT BELLEVILLE.

A conference of representatives of the three Governments engaged in fish cultural work on Lake Ontario was held at Belleville, Ontario, on October 21st, for the purpose of coming to an understanding as to the conditions under which each Government should operate to avoid friction of any kind and overlapping of the three services.

The Dominion Government was represented by Mr. Rodd, Superintendent of Fish Culture and Mr. A. Finlayson, Inspector of Hatcheries; the Ontario Department of Game and Fisheries by Mr. D. McDonald, Deputy Minister, and Mr. A. W. McLeod, Provincial Inspector of Hatcheries; and the United States service by Mr. J. P. Synder, Superintendent of the Cape Vincent Hatchery.

Satisfactory arrangements were completed for the definition of operating areas, and it was agreed that last year prices for eggs would be paid, viz:—50 cents a quart for eggs collected by the fishermen, and 40 cents a quart for eggs collected by the Government employees.

While in the district Mr. McDonald accompanied by Messrs. Rodd and Finlayson examined the waters of the Moira river which were found to be seriously polluted. The condition was most serious from a hatchery point of view.

and that no provincial government could pass such law, as the Dominion Government alone had jurisdiction, if there was jurisdiction anywhere, to deprive the Indians of this right; that the Dominion Government had never taken any right in land from the Indian without his consent and surrender, and it had never taken away any right the Indian had to the water, even by a surrender or otherwise, and never would, as it provided one of the most essential things of their livelihood. Besides, these Indians as riparian owners under the Common Law, had the right to fish in waters adjoining their lands, and the attempt of the Ontario Government to apply the general fish and game laws to Indians, to whom the grant has been made giving them the right, would be in derogation of its own grant, which would not be allowed.

Many documents and authorities were cited by Mr. Porter in support of his argument.

Messrs. M. Wright and Wm. Carnew argued the case for the defendants, contending that whilst not contesting the original right of the Indian to fish as was claimed, yet that the Fisheries Act and regulations thereunder, which had the same force as statutory legislation; that the Indian, although not specifically mentioned in such law and regulations, was subject to the same observation of them and were liable to the same penalties as the white man, and as the act of the plaintiff was such as would render a white man subject to the provisions as to confiscation in the case of unlawful fishing, so the plaintiff, too, was so liable, citing the statute and regulations.

Complimented Counsel.

Mr. Justice Riddell, at the conclusion of the argument, complimented all the counsel for the able and exhaustive arguments they had presented and said that the questions involved were of such great and far-reaching consequence that he anticipated it would take considerable time to read and consider the documents in the archives and the cases already decided on somewhat analogous questions by the courts. It was too important a matter to deal with hastily and he could not promise when judgment would be given.

NAPHTHALENE—A NEW FUEL FOR MOTORS.

While the number of motor boats employed in the fisheries of France are increasing, their introduction is retarded by the high price of gasolene, and the fact that the natural conservation of the fishermen has been re-inforced by a prejudice arising from several disastrous fires in motor boats. The fires appear to have been due in motor boats to carelessness or lack of experience.

But the situation is such that the engineers have been experimenting in an endeavor to develop a motor oil less inflammable and more economical, and as France became a large producer of naptha during the war for the manufacture of explosives, the possibilities of naphthalene are being tried out. A by-product of coal tar naphthalene is nearly solid at ordinary temperatures; submitted to a process of compression and chemical treatment it employs and can be used in the ordinary motor engine, provided it is kept in operation. If the motor is stopped the naptha solidifies in the cylinders and chokes the engine. By treating the naptha to a bath of sulphuric acid and soda, and then of clean water, this difficulty is largely overcome; in this purified form the naphtha-

lene mixes with air in proper proportions and ignition is satisfactory. But the best results have been obtained by mixing the naphthalene with light oils in the proportion of 75 to 25 per cent. In this form there is no choking of the engine when stopped.

One of the advantages claimed for this composition is that with the ordinary motor engine the expense of operation is reduced to 5 cents per horse power hour. The employment of naptha also reduces the risk of fire. Even in the liquid state it is not readily inflammable, and if it does catch fire the application of water will readily extinguish the flames. Of course light inflammable oils must also be carried, but the quantity is greatly reduced, and the light oils can be cut off from the engine when it is running steadily. Some manufacturers are now building attachments for motor engines which enable petrol, benzene, or naphthalene to be used at will. A quality of naphthalene is that it possesses a uniform chemical composition, and a motor functioning on this source of power gives uniform results.

OFFICE IN ENGLAND.

The readers of the "Canadian Fisherman" will be interested in the announcement in another column of our opening an English office early in January. Mr. C. H. Armstrong, who will be in charge, invites correspondence from advertisers or subscribers who are anxious to make connections as representatives of firms in the United Kingdom.

Bulletin Issued by Fisheries Branch, Department of Marine and Fisheries.

At the request of the Fisheries Department a sand bar on the north side of the harbour at Margaree, Nova Scotia, has been removed by the Public Works Department, with a view to assisting the local fisherman in the handling of their fishing boats there.

The salmon fishery of the Miramichi river, New Brunswick, is in excellent condition, states an official of the Fisheries Department. This is evidenced by the fact that during the current season a splendid catch has been made there in nets operated for hatchery purposes. From September 13th to 29th, inclusive, or during a period of seventeen days, 4,447 parent salmon, and a large number of grilse were taken in 10 nets. These parent salmon are for the Miramichi retaining pond. This pond supplies the bulk of the salmon eggs that are incubated in the hatcheries in the Maritime provinces. Stripping operations are now under way, the first eggs having been secured on October 16th.

The amount of fish landed during the month of September on both the Atlantic and Pacific coasts of Canada was appreciably lower than the amount landed in the corresponding month in 1919, and there was a heavy slump in the value. In September of this year, 1,157,870 cwt. of sea fish were landed, while in September of 1919 the catch amounted to 1,429,160 cwt. The value of the catch at the point of landing was \$3,581,567 this September, as compared with \$6,113,723 last year.

The decrease in quantity landed and in the value is attributed to the falling off of 108,000 cwt. in the aggregate catch of cod, haddock, hake and pollock, and of 145,000 cwt. in the salmon catch.



Fishing Rights of Indians

Important Constitutional Case
Argued in Ottawa recently.



At a special sittings of the Supreme Court of Ontario held in Ottawa last August and presided over by the Hon. Mr. Justice Riddell, an important constitutional case was heard having great general interest, inasmuch as it was instituted by the Mohawk Indians of the Tyendinaga Reservation to establish their original rights of fishing on their reservation and in the waters of Bay of Quinte adjoining, without license, and which involves the right of all Indians in Canada to fish in waters contiguous to their reservations without being subject to paying a license fee and taking out licenses from the provincial government for so doing.

The case as presented by E. Guss Porter, K.C., for the Indians, disclosed that the plaintiff, Eliza Sero, is an Indian woman of the Mohawk band of Indians, occupying certain lands in the Tyendinaga Indian Reserve, bordering on the Bay of Quinte, and as such Indian woman drew bounty money from the Dominion Government from the consolidated fund held by it for the benefit of the Six Nation Indians, of which the Mohawk band is one.

In November, 1919, Gault and Fleming, two fishery overseers, appointed by the provincial government of Ontario, and acting upon its instruction, went to Mrs. Sero's place upon the reservation and seized her nets and fishing apparatus and confiscated them, their value being something like \$700.

Imprisoned at Belleville.

Mrs. Sero was prosecuted before Police Magistrate Bedford of Deseronto for illegally fishing, contrary to the fish and game laws. She was fined by the Police Magistrate and in default of immediately paying the fine was imprisoned in Belleville gaol.

Mrs. Sero's counsel, Mr. Porter, took an appeal against her conviction, and before it was heard the Ontario Government abandoned the conviction, ordered her release from gaol and restoration of her property, but her property seized was not in fact given back to her. Mrs. Sero then brought this action against the two officers of the government to recover the value of her property and to establish her right to fish without a license or paying a license fee.

Trial Judge Died.

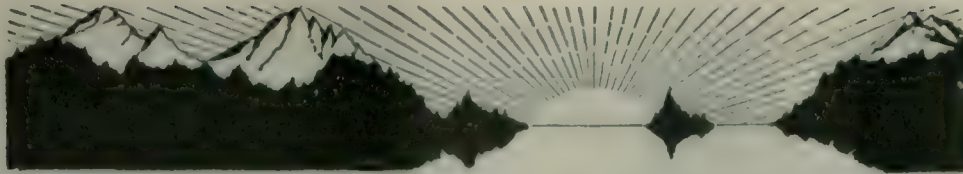
The case was tried before the late Sir Glenholme Falconbridge, Chief Justice of the King's Bench, but before the case was argued or judgment given he died and by consent, Mr. Justice Riddell was appointed to determine the case; and he appointed Ottawa as the place for hearing argument in order that he might have access to the public archives, many ancient docu-

ments, proclamations, treaties, etc., therein having to be consulted, considered and construed.

Mr. Porter, on behalf of the plaintiff presented a most elaborate argument, showing careful preparation and for which he must have brought to his help many musty, if not forgotten, documents of the constitutional history of Canada, and showing exhaustive research in his efforts to establish the rights of his Indian client. Incidentally he mentioned the fact that his client was backed by the whole of the Six Nations Indians. Mr. Porter's main contentions were that the Indians, being the original possessors of the land as well as the waters of Canada, were never a conquered people like the French, but were always treated as allies of the British Crown, and while a conquered people might have imposed upon them any laws their conquerors saw fit to impose and also forfeited their territorial and possessory rights, yet the Indian as an ally was not so subject, but only to such laws as they assented to by treaty, or otherwise. The British Crown has in regard to the Indian always recognized this distinction, and while the French at the conquest of Canada and the Treaty of Paris following that event forfeited their rights, by the treaty itself and the proclamation of Great Britain following the treaty, the possessory rights of the Indians were preserved — and so through all the legislation creating the province of Quebec, the separation of that province into Upper and Lower Canada, and in the Act of Reunion of the two provinces as the Province of Canada, and finally the Confederation under the British North America Act, the rights of possession by the Indians were reasserted and declared, and by the B. N. A. Act as a final effort to protect such possessory and other rights of the Indians it was declared that exclusive jurisdiction over the Indians and their affairs was vested in the Dominion Government, thus securing them against provincial interference. Under these conditions, and when Canada was divided into Upper and Lower Canada in 1793, the deed of the Mohawk Reserve, known as the Simcoe Deed, was granted to the Mohawk band of Indians, and in that deed, and following the principle of the Crown theretofore declared, it was expressly stated that "Our faithful allies" (the Indians) should "hold, use and enjoy the territory free and clear from any fees, dues, exactions, etc., and according to their ancient uses and customs" (one of which would be fishing).

INDIAN RIGHTS PRESERVED.

Mr. Porter declared that there had never been any legislation taking away this ancient use and custom



BONNIEVILLE HATCHERY

Impressions of Mr. F. E. Burke, of Vancouver, B. C.,
vice-president of Canadian Fisheries Association after a visit to Bonnieville,
Oregon, U. S. A.

My first impression after being at the Bonnieville Hatchery for a short while, aside from the pleasing qualities of the natural surroundings of the place, was the business like atmosphere and the apparent knowledge of the men of just what they were doing. While apparently they were quite familiar with all theoretical ideas, they also seemed to recognize that a good deal of the money being spent was being spent from public funds raised by taxes, and by certain amounts contributed by people in the business, and that in spending this money they were not only expected to show theoretical results but also practical results, as a practical return on the money was what would appeal to the men in the business rather than the theoretical success.

The operatives of the Bonnieville Hatchery apparently know they are succeeding and are pushing their success along the lines that show results.

Similarly to any successful business, they know their operations can probably be improved, and because they are a success, they are not letting up in their efforts, but are apparently putting forth more effort everywhere so as to increase successful results. They are apparently quite familiar with all the theories that have been tried out, and as these theories have never given any apparent success they have discarded them after trying them, and kept on working out new ones until they have brought about the present success on the Columbia River.

The feeding ponds and the basis that they are operated on, is beyond anything that I had anticipated. While I knew they were making considerable headway, and while I was especially impressed by the talk of the head of this Hatchery, Mr. Clanton, at the Canadian Fisheries Association Convention, what they are doing is on a much more successful scale than I had expected.

What particularly appealed to me, and I suppose it was because my mind runs more to practical results than to theories, was the organization and the results it has shown. Making allowance for a favorable season for the grade of fish which they produce, the catch this year in their locality was nothing short of a wonder. They have brought the Oregon pack back to the point where it was greater than its best year, and they speak of and expect to produce much greater packs than this year.

I think that the main cause of their success is the

fact that they are free of politics, and that the operations of these hatcheries are under practical men in the industry who understand the business and who primarily want practical results from the operations. The Fish & Game Commission of Oregon who operate these hatcheries, receive financial help from the men interested in the industry. This is as it should be, and I think that there would be no trouble at all in securing funds from operators in the industry, if they knew they were going to have something to say about the expenditure of the funds, and know that practical men would be in charge of these expenditures who would consider their views.

It is true that the Oregon Fish & Game Commission has very competent heads in Mr. Warren and Mr. Clanton, but I think that with the proper financial encouragement men similar to Mr. Clanton could be developed.

As far as applying the conditions governing at Bonnieville to the British Columbia hatcheries, I believe that this could be done. While it might be rather difficult to get supplies, etc., back to the headquarters of some of the Sockeye Rivers and to the headquarters of the Fraser, at the same time there are sufficient localities where we have had hatcheries established, and in points where we have had not hatcheries established, where natural feeding ponds could be developed and arrangements made for the food necessary to feed and retain fish. The area required for ponds is not large, and the fact that the retaining pond system tends to the maturing of a big percentage of the fish hatched instead of hatching enormous quantities and figuring on a minimum return, makes the feeding pond system a very attractive proposition.

The feeding pond, either natural or artificial, could not give any worse results on the Fraser than obtained there at the present time, and even though it produces fish that it takes longer to mature and return, as is claimed by some, these fish, from the reports of the Columbia, are much larger fish, and this would offset the delay in return.

I firmly believe that the Fisheries of Puget Sound and British Columbia would benefit immensely if the feeding pond system was employed, and that sufficient fish could be produced out of the eggs hatched to increase the pack enormously, and to allow it to go on increasing rather than decreasing to a minimum as now prevails.



SOME OF THE WORKERS AT ST. ANDREWS BIOLOGICAL STATION.—SEASON 1920.

Back row, left to right. Dr. L. Gross, McGill University; Miss B. K. Mossop, Western University, London; Miss J. McFarlane, Toronto University; Second row, left to right: Miss E. Shanly, McGill University; Prof. E. E. Prince, Dominion Commissioner of Fisheries; Prof. A. Vachon, Laval University. Front row, left to right: Dr. C. J. Connolly, St. François-Xavier College, Antigonish; Dr. J. W. Mavor, Union College, Schenectady; Dr. A. G. Huntsman, Toronto University, Curator of the Station.

SEA WEED AS A HORSE FEED.

An interesting communication has been made to the Academy of Sciences of France on the use of seaweed as fodder for horses. Investigation has established that seaweed has its seasons like grass. During the summer the seaweed changes itself with hydrate of carbon, comparable with starch, and when gathered in the autumn, and treated for the reduction of salts and the conservation of sugar properties, exhibits a chemical combination sensibly the same as grains. Two truck horses employed at hard work

were fed about 8 pounds of seaweed each per day, their only other fodder being hay and straw. At the end of two months the horses fed on seaweed appeared in as good condition as horses fed on 8 pounds of oats, doing similar work; and when both pair of horses were put to a prolonged and arduous test they showed no appreciable difference in staying qualities.

Accordingly, the French savants claim that it is possible to substitute seaweed, properly treated, for oats as food for working horses, but information as to relative costs has not been offered.



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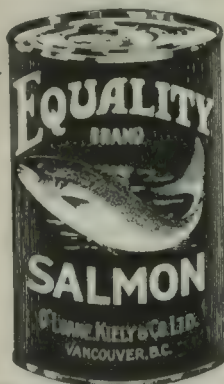
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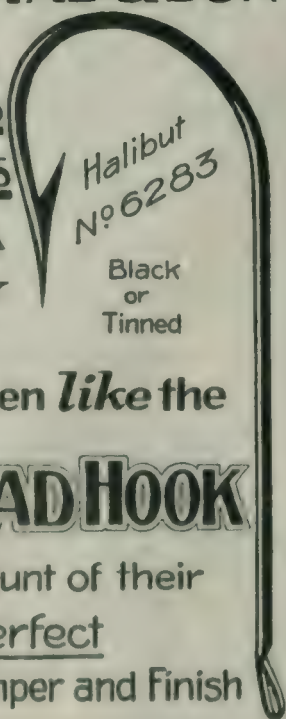
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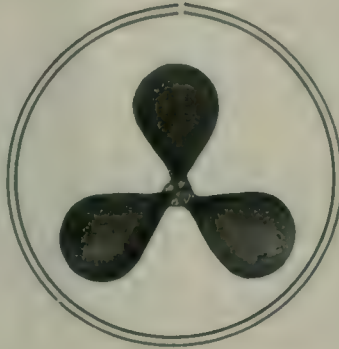
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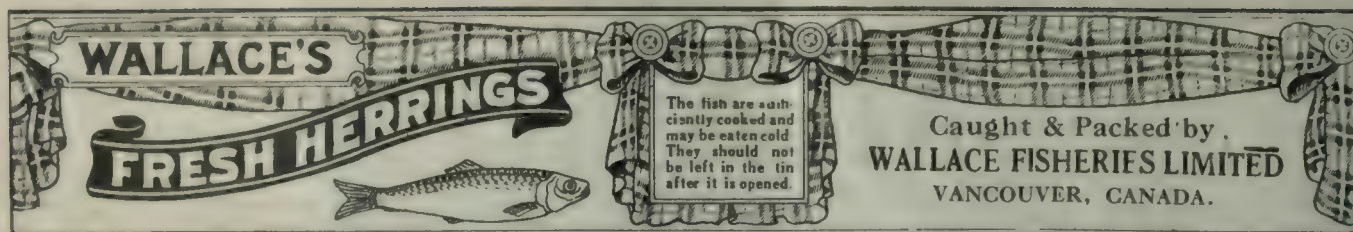
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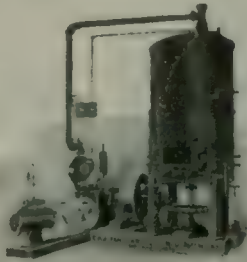
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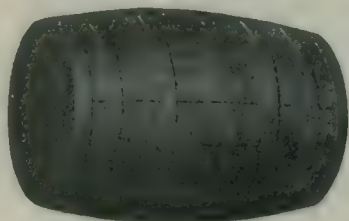
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Mr. Cobb was for 17 years a field agent of the U.S. Bureau of Fisheries, and in the course of his duties visited practically every fishing settlement and packing establishment in the United States many times; later was editor of the Pacific Fisherman, and now is Director of the College of Fisheries, University of Washington.

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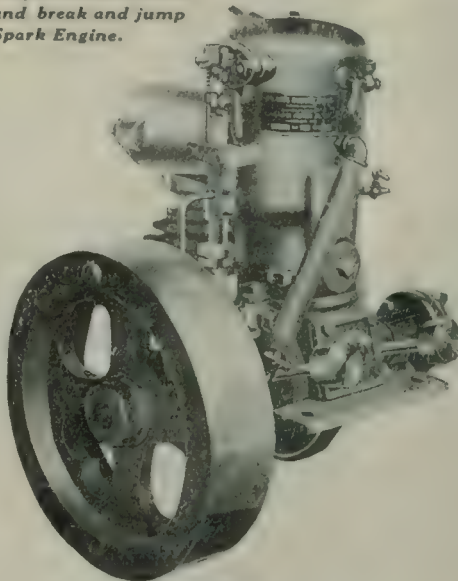
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best known and have
proved most satisfac-
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WHAT'S the first thing you seek in rubber boots? Service, of course. Then by all means buy Goodrich "Hi-Press," for no other boot has such a record for consistently long wear.

Want comfort? Sure; for a few pennies saved cannot compensate for aching feet. Then by all means buy Goodrich "Hi-Press," for Goodrich has the secret of uniting comfort with long wear and economy.

Goodrich "Hi-Press" footwear won't leak, crack or come apart—you can bank on that. Insist on Goodrich "Hi-Press"—you can always tell it by the RED LINE 'Round the Top.

THE B. F. GOODRICH RUBBER CO.

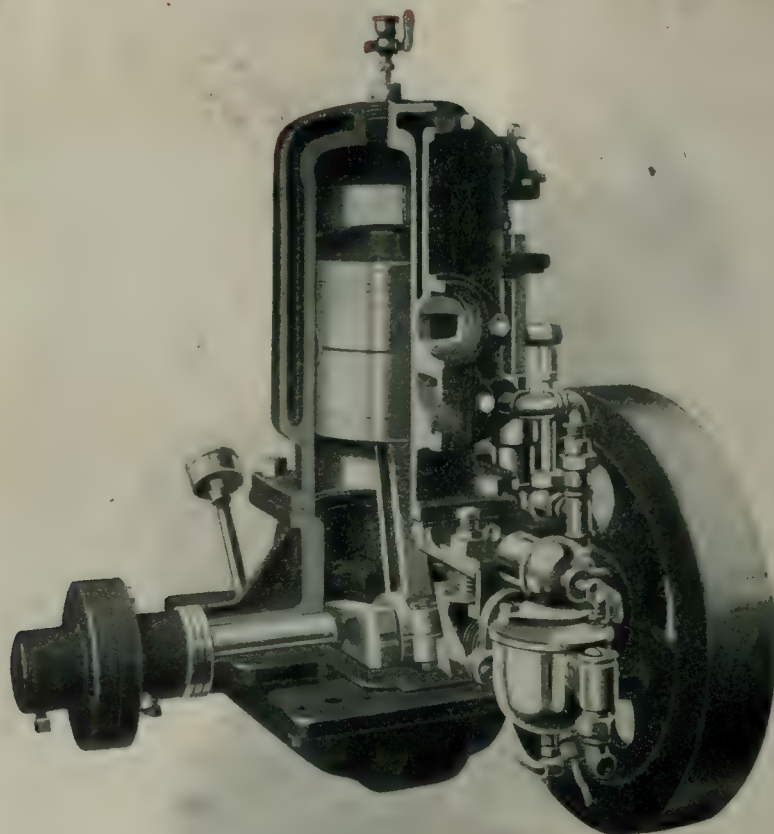
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Instal an "ACADIA" Engine in your Boat and enjoy lasting satisfaction by using an engine that is strongly built, easy to operate and always dependable.

All "ACADIA" Engines have a reserve of power and are rated very conservative.

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NEWFOUNDLAND

THE CANADIAN FISHERMAN

Official Organ of the Canadian Fisheries Association

VOL. VII.

GARDENVALE, P.Q., DECEMBER, 1920

No. 12

D. Hatton Company MONTREAL

Largest Receivers and Distributors of all kinds of
FISH in the Dominion.

Experts in the Handling of Bulk and Shell OYSTERS.



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For your Winter Supplies be sure and ask for our Prices before placing an Order. It will sure pay you.

We have ready for distribution from our Cold Storage Plant and Warehouses, all the varieties that our Oceans, Lakes and Rivers produce — either fresh, frozen, smoked, pickled, boneless, dried, prepared and canned.

Our Staff is at your disposal to give you the best service available.

Whenever our Travellers call upon you, spare them a few minutes of your time. They will interest you whether you favour them with an order or not.

Department of Marine
and Fisheries
Fisheries Branch

OTTAWA

The Fisheries Branch, Ottawa, strongly advocates that foreign markets requiring Canadian fish be supplied direct.

In connection with the principle of direct marketing and the ultimate effect of its non-observance, G. B. Johnson, Canadian Government Trade Commissioner in Brazil recently sent the following pertinent advice to a Canadian fish exporter:

Unfortunately you quote f.o.b. Port Elgin, instead of c.i.f. Rio, or at least f.o.b. Canadian shipping port. The importer here has no means of finding out the freight rate from your town to a Canadian shipping port or to Brazil, so it is impossible for him to know what the fish would cost him landed in Brazil, and therefore what quotations to make to his own customers in this country.

Large companies in Canada should not hesitate to eliminate the New York broker in the disposal of their product to other countries, as they have the means to provide themselves with an organization to properly handle direct overseas shipments themselves, and so avoid handing over a slice of the profits and good foreign customers to unnecessary middlemen, to say nothing of the fact that Canadian prestige and reputation for a broad business outlook suffer if producers in Canada continue to find it necessary to have the helping hand of a New York firm to market their products abroad. Of course, if these products are for consumption in the United States the matter is entirely different.

In the latter case it is naturally an assistance to the American importer to have, as you say, exchange in his favor, although that is no detriment to yourself. In fact it is an advantage if you are competing with U. S. fishermen in the U. S. market. But if you are trying to sell your products direct in Brazil or other foreign country against U. S. competition, then naturally you have an advantage over your American competitor, in the matter of exchange, measured by the premium of U. S. funds in Canada, because the overseas importer pays 10% or 12% less at present in his own currency for a draft drawn against him in Canadian dollars than for a similar draft in U. S. dollars.

If the New York broker buys his fish in Canada, and sells it, say, in Brazil, he has the advantage in selling, which balances each other more or less, leaving him in the same position, so far as exchange goes, as the Canadian who sells direct in the overseas market. But the middleman has the disadvantage of trying to sell at a higher price of buying at a lower in order to provide himself with a profit.

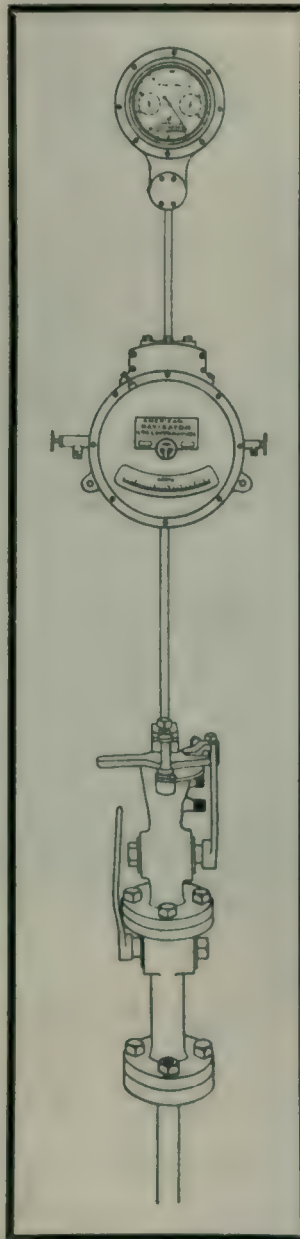
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"The Log Long Looked For In The Maritime Field."

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the Pitot Principle

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In the Engine Room

Distance Recorder
on the Bridge



Entirely Automatic

Functions with
unfailing precision

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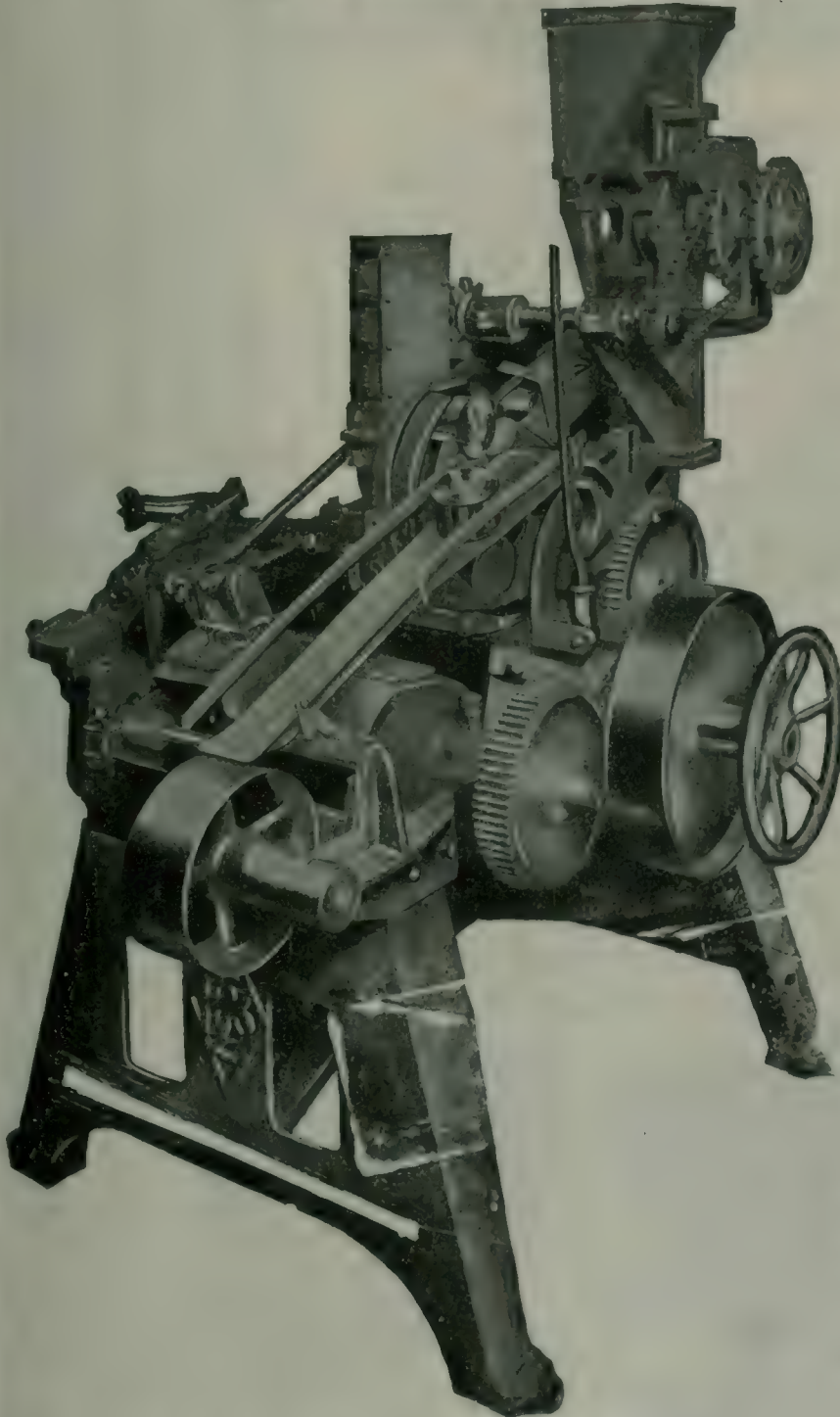
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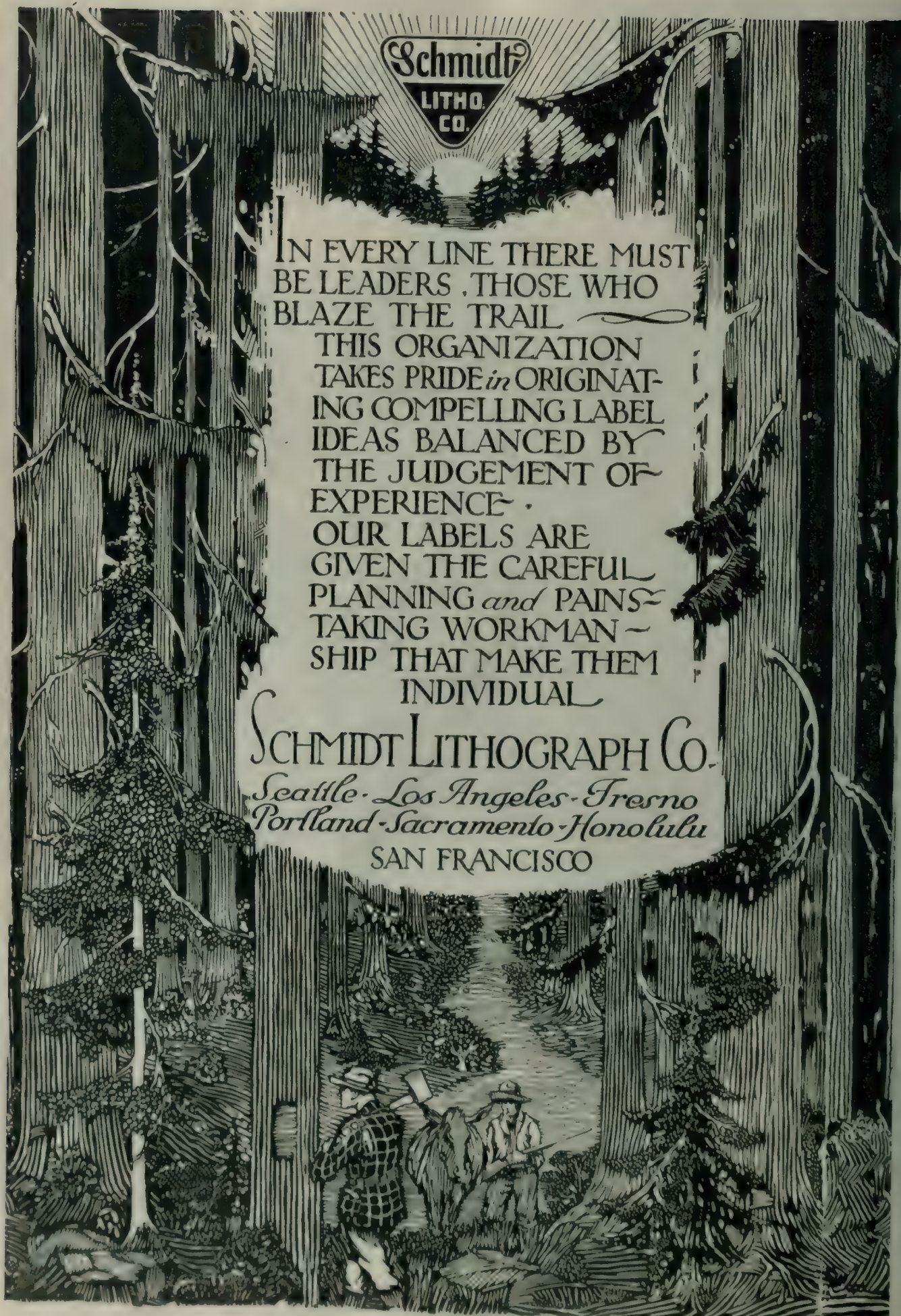
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BE LEADERS .THOSE WHO
BLAZE THE TRAIL

THIS ORGANIZATION
TAKES PRIDE *in* ORIGINAT-
ING COMPELLING LABEL
IDEAS BALANCED BY
THE JUDGEMENT OF
EXPERIENCE .

OUR LABELS ARE
GIVEN THE CAREFUL
PLANNING *and* PAINS-
TAKING WORKMAN-
SHIP THAT MAKE THEM
INDIVIDUAL

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Eat lots of Fish during Summer Months.
A Fish diet clears the brain and keeps the body physically fit.

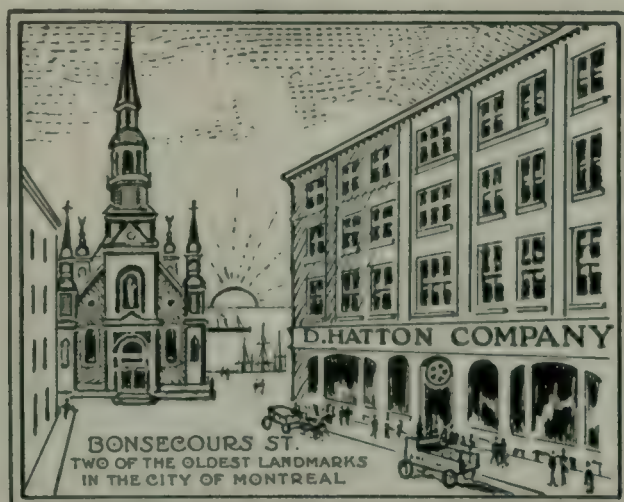
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D. Hatton Company

MONTREAL

Largest Receivers and Distributors of all kinds of
FISH in the Dominion.

Experts in the Handling of Bulk and Shell **OYSTERS**.



To the Trade:

We suggest for the Summer Season you place a standing order with us for your weekly supplies of **FISH**. We guarantee you quality and service. Here is a few of the lines we recommend.

FRESH:

Haddock, Codfish, Halibut, Salmon, Dore, Lake Trout, Whitefish, Pike.

SMOKED:

Eels, Fillets, Haddies, Bloaters, Kippers, Digby Chicks.

SALTED:

Boneless or Dried Codfish, Labrador Salmon, Mackerel, Sea Trout, Herrings, Codfish Tongues and Sounds, Imported Scotch and Holland Herrings, etc.

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Against the Powers of Ignorance

\$5,000,000 NEEDED

To build up good Canadians, second to none as

ENGINEERS, CHEMISTS, PHYSICIANS, SURGEONS, DENTISTS, SCHOLARS, LAWYERS, MINISTERS, ECONOMISTS, TEACHERS, EDITORS, ARCHITECTS, SCIENTIFIC FARMERS, EXPERTS IN BUSINESS.

SIR ARTHUR CURRIE

formerly Commander-in-Chief of the Canadian Army, and now Principal of McGill, gives this message :—

“We are all standing to-day in another set of trenches, prepared to give battle against the powers of greed, selfishness, and ignorance, and ready and willing to evince the same high courage, the same unflinching devotion, the same steadfast earnestness, and the same determination to win as were displayed by our countrymen in the crisis of the Great War. McGill aims to be a great seat of learning, to develop in its students a love of study and research, to help them understand and appreciate the lessons of history, to master the mysteries of nature, and to obtain a proper conception of their duties and responsibilities as citizens, while recognizing at the same time the spirits and the needs of the times. She will maintain the highest intellectual traditions of our race, and will inculcate the truest moral standards. She seeks the truth and unselfishly desires to serve.”

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1825



1920

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Lion Brand Cordage renders great strength and has secured an enviable reputation throughout the Fishing Industry.

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The fact that for ninety-five years we have been MANUFACTURING and SELLING, is our best recommendation.

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Manufactured in Canada since 1825.

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Nova Scotia's Enormous Fishery Resources

Afford an Unequalled Market for Buyers of
Fish and Fish Products

- and -

Wonderful Opportunities for Investment and Employment

- ¶ The Sea Girt Province of Nova Scotia is blessed with territorial waters prolific in Lobsters, Herring, Haddock, Cod, Hake, Pollock, Mackerel, Gaspereaux, Halibut, Albacore, Clams and Various Shell Fish.—All suitable for the maintenance of thriving inshore fisheries.
- ¶ The ports of the Province are all adjacent to the great offshore fishing banks of the Western North Atlantic and afford unexcelled opportunities for the economical exploitation by fishing vessels of of the larger type.
- ¶ Nova Scotia's annual catch of fish exceeds two hundred and fifty million pounds in weight—the highest of all the Canadian Provinces.

If You Are Buying Fish—

If You Have Capital To Invest—

If You Are a Practical Fisherman—

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Ocean, Lake and River Fish

Fresh Canned Frozen Salted Smoked

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Port Arthur
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Montreal
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Haddies, Fillet, Kippers,
Bloaters, Scotch Cured Herring

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Sea Fish

Exceptional Angling == Opportunities ==

are offered by the Province of Quebec, which is the only one that leases exclusive hunting and fishing territories over large area of forest, lakes and rivers both to Clubs and private individuals, with the privilege of erecting camps thereon.

Membership may be obtained, if desired, in many existing clubs, with camp privileges already provided, and often with the right of erecting private summer homes on suitable sites on the club territory.

On all unleased Crown Lands and Waters, angling and hunting are absolutely free to residents of the Province, and the only charge to non-residents is the cost of the non-resident fishing or hunting license.

To the Wholesale Fish Trade

The attention of dealers who receive their fresh fish from Portland and other foreign sources is directed to the exceptional opportunities of obtaining their supply from the Baie des Chaleurs and the North Shore of the St. Lawrence, to their own advantage and that of their customers, and to the benefit of the fishermen of the Province of Quebec.

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Of the Province of Quebec**

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HALIBUT, SALMON, HERRING,
CODFISH, ETC.**



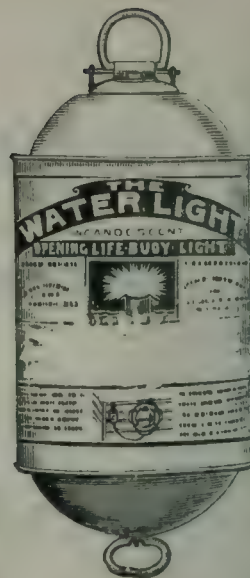
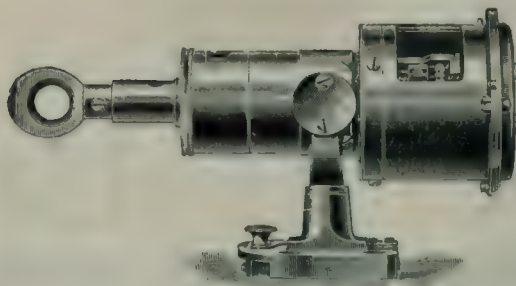
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Linen Gilling Nets, Gilling Twines,
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Hoop Nets, Fishing Rope,
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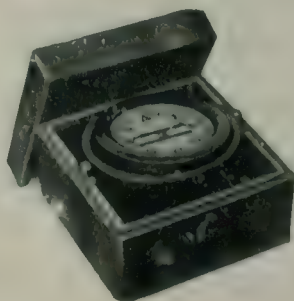
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A Monthly Journal devoted to the Commercial Development of the Fishery Resources of Canada, and the Technical Education of those engaged in the Industry.

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No matter where you live, or what your business, you are constantly dependent on pumps for the water you drink, for the protection of your home from fire, or the production of the things you use, wear, and eat. And quite likely it is a Fairbanks-Morse pump, for Fairbanks-Morse pumps have long been recognized as standards—dependable pumps, constantly giving maximum service under the most exacting conditions.

The Canadian Fairbanks-Morse engineers know the pumping problems of Canada and, with all the resources and reputation of this national institution behind them, have developed pumps that meet every requirement and meet it with a product that is worthy of being branded "Fairbanks-Morse 100% quality."

Make this mark your guarantee of satisfaction and our catalogue your buying guide.

**The
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Limited**

*Canada's Departmental House
for Mechanical Goods*

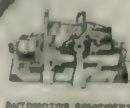
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TRANSMISSION

The Editor and Publishers of the "CANADIAN FISHERMAN" desire to extend to their readers and friends in the Fishing Industry of Canada and elsewhere a joyful Christmas and an untroubled and prosperous New Year.

CANADA'S NATIONAL FISH DAY.

The Canadian Fisheries Association has named Wednesday, February 9th, 1921, as Canada's National Fish Day and preparations are underway to make the 1921 fish date the most successful of all.

Previously, these Fish Days were celebrated on various dates throughout the year and experience has shown that they were not always suitable to all branches of the Trade.

The coming National Fish Day has been set on the day that opens the Lenten season and this fact will ensure that the event will suit the Trade from east to west.

By booming the coming National Fish Day, the C.F.A. hopes that the attention of the public will be drawn to fish as a food at a season when good supplies and varieties are forthcoming and when religious decrees call for the use of fish.

The wholesale trade are urged to advertise the date freely and to circularize their customers. The retailers, it is hoped, will decorate their stores and make a special effort in displaying fish.

CANADA'S NATIONAL FISH DAY — WEDNESDAY, FEBRUARY NINTH. DON'T FORGET THE DATE.

EXPRESS RATES HEARINGS.

The final session of the hearing with regard to the increase in rates asked for by the associated Express Companies was held in Ottawa on December 15th. Mr. D'Arcy Scott, counsel for the Canadian Fisheries Association, presented the Association's case before the Board of Railway Commissioners, and in his final argument urged strongly that if any increase were to be granted the Express Companies, it should be confined to articles moving first class only, and that the precedent, established last year by the Board, of continuing the low commodity rates on fish without increase, be followed.

He also urged, that, as the cost of operation was coming down, if any increase were granted the Express Companies, it should be of a temporary nature only and that it should not extend beyond the first of May, 1921.

The decision of the Board of Railway Commissioners has not yet been announced, but there is every indication that the Express Companies will be granted increased rates—just what percentage of increase is hard to determine.

TECHNICAL EDUCATION FOR FISHERY OFFICERS.

We are delighted to notice that a start has been made in the direction of providing technical education for Dominion Fishery Officers. It will be remembered that the Canadian Fisheries Association urged such education in the list of recommendations for Canadian fishery development presented to Hon. Mr. Ballantyne in May, 1919.

The technical instruction is being carried out under the auspices of the Biological Board of Canada and the following syllabus has already been framed and instruction given by Prof. E. E. Prince and Prof. A. G. Huntsman. The first courses were given to the Officers of the Atlantic Division under Mr. Ward Fisher's jurisdiction.

(1) Fishes and their environment, with special reference to the senses in their bearing on the fishing industry:—

- (A) Sight (Eyes)
- (B) Hearing (Ears)
- (C) Taste and smell (Olfacto-gustatory Bulbs, etc.)
- (D) Lateral Line (Heat, Cold, etc.)
- (E) General Sensation (Vibrations, etc.)

(2) Migrations of Fishes, as related to Fisheries:—

- (A) Gonotropism
- (B) Trophotropism
- (C) Thermotropism
- (D) Halotropism
- (E) Phototropism

(3) Theory of Fishing Methods:—

Baited, Sedentary, and Moving Gear

(4) Types of Atlantic Fishing Gear:—

- (A) Baited.
 1. Short Lines
 2. Deep-water Lines
 3. Trawls
 4. Lobster Pots and Hoops
 5. Carrelets or Scoops

(B) Unbaited 1. Sedentary

- (a) Seines (staked)
- (b) Mackerel and Salmon
- (c) Traps or Pound-nets
- (d) Fyke or Hoop-nets
- (e) Weirs and Eel-traps
- (f) Grapnels or unbaited hooks

2. Non-Sedentary

- (a) Spearing and Jigging Gear
- (b) Dip-nets and Shrimp Scoops
- (c) Shad and Sturgeon Spring Nets
- (d) Bag-nets
- (e) Drag Seines
- (f) Purse Seines
- (g) Gill-nets
- (h) Bear Trawl
- (i) Otter Trawl
- (k) Dredge and Tongs

THE BIGGEST EVENT OF THE FISH-MONGER'S
CALENDAR — NATIONAL FISH DAY,
WEDNESDAY, FEBRUARY NINTH,
1921.

THE INTERNATIONAL FISHING SCHOONER RACES.

The America's Cup contest is in danger of being over-shadowed in the future by the International Fishing Schooner Race. The Halifax sailing race has been productive of enthusiastic comment in both Canada and the United States, not from the fishing industry alone, but from yachtsmen, sea-lovers, and the general public.

It is a pleasure to read press reports and newspaper editorials upon the contest. All admit the superiority of the seamanship involved and most draw odious comparisons with the America's Cup races. The opinions expressed regarding the latter incline one to the belief that as a test of international seamanship, the America's Cup Race has lost its place to the more practical competition between vessels whose speed under sail is their bread and butter.

Canada lost the first race, but no Canadian feels downhearted. Rather do we feel proud of our initiative in getting the contest underway. It is now firmly established as an annual event and there is no doubt but what the next race will command the interest of all the nations bordering on the North Atlantic.

The "Esperanto" won the trophy fairly and squarely, but we refuse to admit that American seamanship and American sailing craft are superior to our own. The "Delawana" and Captain Himmelman and his crew were the best factors available to defend Canada's challenge, but it is quite possible that both schooner and skipper could do better had they more time to prepare.

The contest in 1921 will be the real test. Canadian fishing skippers will be watching the performances of their vessels with more interest and will, no doubt, try their skill at racing tactics while pursuing their vocations. Vessel owners will be keeping tab on the speedy craft in their fleets and will arrange to put them in to the elimination contests out of which the best vessel will be selected to challenge for the cup next year. New craft will be designed with an eye to bringing the trophy back and there is no doubt but what the

coming year will see the launch of some fishing craft which will be the last word in speed under sail.

It is to be hoped, however, that utility and seaworthiness will not be sacrificed for speed. There is always that danger. The America's Cup, in the early years, was raced for by healthy types of sailing craft but the desire for speed gradually eliminated seaworthiness and resulted in the evolution of freak structures. Possibly the best guarantee that such will not happen in fishing schooner design would be to frame a regulation that all contesting vessels must be employed for at least three months prior to the race in the bank fisheries. Old Neptune himself and the conditions of the fishery will prescribe certain limits of seaworthiness which cannot be overstepped without hazard.

DO YOUR BIT TO BRING THE NATIONAL FISH
DAY BEFORE THE PUBLIC. IT WILL
PAY IN THE LONG RUN.

THE YACHTING MENACE IN THE INTERNATIONAL FISHERMAN'S RACE.

Perhaps "menace" is a rather harsh term to use with regard to the threatened invasion of the International Fishing Schooner Races by yachtsmen and craft of yacht design, but reports coming to us from the United States show that movements are afoot whereby, if successful, the Fisherman's Race will become a misnomer.

A report in a Boston Sunday paper states that Boston is to build a craft by popular subscription to defend the cup won by the "Esperanto". In the subscription form of the promoters appears a seductive paragraph "that this investment should yield handsome dividends, as a fishing vessel, well managed, should pay as high as 25 per cent per annum."

Further reports in Boston papers with regard to this craft are: "Boston yachtsmen expect to finance a schooner built specially to help defend the International Fishing Vessel Trophy won by the Gloucesterman "Esperanto". Also the item — "sober minded yachtsmen are back of the racer, and it would do one good to glimpse the names."

It is quite possible that this outside interest will creep in with regard to the Canadian challenger, but it is to be hoped that the organization in charge of the Trophy will deter any such moves. Let the contest be a genuine trial of seamanship between genuine fishermen and with genuine fishing craft. If outside sporting elements are permitted to have the building and running of the racers, the prime motive of the races will be shoved aside and the whole business will, in time, degenerate into a contest of freak boats financed by wealthy yachtsmen.

Let us keep these races as an incentive to superior seamanship on the part of our fishermen; as an annual event in the year to look forward to; as a means of calling attention to our undeveloped and unappreciated fishery resources. And let the vessels be designed primarily for fishing use and owned and operated by either firms or individuals engaged in the fishing industry.

These are not yachtsmen's races. They are the contests of men who sail vessels as part of the work that gains them their daily bread. Let us keep them within the fraternity.

NEW CHALLENGER FOR FISHERMAN'S CUP BUILDING.

On December 18th, the Duke of Devonshire, Governor General of Canada, drove the first spike in the keel of a new fishing schooner designed to challenge for the International Fishermen's Sailing Trophy in 1921. The vessel is being built by Smith and Rhuland, Lunenburg, for Capt. Angus Walters of the same place. The new schooner's designs are from the board of W. J. Roue of Halifax.

His Excellency said that he hoped to be at the launching of the vessel "he helped to build" and, still better, to be present when she came home as "the champion sailing schooner of all the fishing fleets in America."

NATIONAL FISH DAY — WEDNESDAY,
FEBRUARY NINTH, 1921.

EXPRESS RATE INCREASES.

The Producers of fish on the Atlantic Coast appeared before the Railway Commissioners, objecting to the increase in rates on fresh and mildly cured fish from the Atlantic Coast, on the grounds that the product is a low priced food, intended for the masses — that an increase of 40 per cent on the present commodity rates would practically kill the development of this industry between the Atlantic Coast and the large centers in Quebec and Ontario. The producers of fish on the Atlantic Coast are in accord with the judgment issued by the Board of Railway Commissioners in March of last year, in reference to the commodity rates which in part reads as follows:

"I am ready to admit that the value of all commodities has very greatly increased since commodity rates first came in, and that one of the elements in rate making relates to the value of the commodity carried and to the increased risk undertaken. As against the shippers and vendors of these articles of daily necessity, there is no difficulty in the express companies justifying a reasonable increase. I do not think, however, that the matter ought to be so considered at the moment. The companies will obtain a fair measure of increase in their first-class and second-class rates. That increase it is hoped will prove sufficient to properly maintain the companies and the business; but whatever increase is placed on these commodities would form a reason, (a comparatively small one it is true in most instances, but still a reason), for further increases in the charge made to the consumer. In the past experience it would appear that the increase in charge to the consumer would be much greater than the increased cost per pound or per pint of the commodity. The cost of living is still mounting. As I see it, it is not to the public interest, and not in the interests of the express companies themselves, to afford the excuse that a raise in the price of transportation of these essential commodities would give for still higher charges against the public. Over and above the essential interest of the consumer, a further and very real ground for withholding increases in these commodity rates, unless it proves to be absolutely necessary, lies in the position of the producer. The commodity rates are the producer's rates. He produces in quantity and ships in bulks. On the pound

"unit of production, his resultant profit is small. His costs have greatly increased. I would dismiss the companies' applications in so far as the commodity rates are concerned, entirely, subject to the right of the companies, should it be found impossible for them to make both ends meet, to renew the application. I have mentioned only the chief commodity rates, but would deal with all on the same basis."

If it is found that the Express Companies require further revenue, the producers of Atlantic Sea Fish feel that this revenue should be placed on articles of general merchandise, placed on the list of first class commodities, where the increase would not be materially felt, and not on low priced food commodities such as fresh and mildly cured fish from the Atlantic Coast, which is the food of the people who cannot afford to buy high priced food products. In the last judgment issued by the Board, the delivery service performed by the Express Companies at point of destination was cancelled, and the rates on carload service are now exclusive of wagon service, whereas in the past the Express Company performed this service. It is claimed by the Express Companies, that this cartage service at points of origin and destination was a source of great expense to them, and this in itself meant considerable saving to the Express Companies involved. The movement of fish by Express is absolutely necessary to the welfare of this great natural resource, and to the consuming public, also to effect regularity in the movement, which is not feasible by freight shipments.

HAVE VERY LITTLE KNOWLEDGE OF OUR FISHERIES.

"Fish has fins and a tail; also scales which make it waterproof."

"Fish is a good brain food. Teachers should advise their pupils to use it and I know some grown-ups to whom it would not do any harm."

These are just extracts from essays which have been submitted by school children in different parts of Canada in connection with the contest introduced by the Fisheries Department, Ottawa, and for which money prizes are offered. Although the time limit does not expire until November 30, essays are already pouring in. To say the least they provide very interesting reading, and furnish illuminating evidence as to the general knowledge of our Canadian fisheries. Probably on no other subject could Canadians show such lack of knowledge. Canada ranks amongst the foremost fish producing countries of the world. Fisheries experts from all quarters of the globe visit Canada to study and to investigate different methods employed. But, strange to say, with very few exceptions, Canadian people themselves know nothing about the subject.

NATURAL RESOURCES OF NOVA SCOTIA.

We have received a pamphlet with the above title published by the Department of the Interior. Much valuable information has been given regarding the natural wealth of the Province and we are glad to see that the Fisheries have been given a prominent place. A whole book could be written upon Nova Scotia's fishery possibilities and the Provincial authorities might be well advised to do something in that line.

College of Fisheries Syllabus

Course of Instruction at Seattle College Open to Canadian Fishermen.

Professor John N. Cobb, Director of the College of Fisheries, University of Washington, Seattle, has been kind enough to send us particulars of the short course in fisheries commencing January 3rd, 1921. Professor Cobb, in a letter to the Editor, states:—"Until the time arrives when Canada will have a College of Fisheries of its own, I hope that you will consider that our facilities are at your disposal the same as for our own fishermen and others. We make no distinction between students from the State of Washington and those from other States in the Union or from foreign countries. The cost in either case will be the same."

Speaking on behalf of the Fishing Industry of Canada, we greatly appreciate Prof. Cobb's kind offer and we would like to see some of our people take advantage of the Seattle College course in Fisheries. The course of instruction which is a splendidly comprehensive one, is as follows:—

The Short Courses in Fisheries offered during the winter of 1920 by the College of Fisheries, University of Washington, proved so successful that it has been decided to repeat them in a greatly enlarged form during the winter quarter beginning January 3, 1921. These Short Courses are offered primarily for the benefit of persons engaged or interested in some phase of the fishing industry and who desire to increase their efficiency, but cannot take the time required for a broader and longer course. All persons, however, who are interested in any of the subjects offered, whether fishermen or not, are welcome to take them. Every effort has been made to have these Short Courses simple, concise, and thoroughly practical, the work being given by means of lectures, quizzes, laboratory and field practice. In the Food Products Laboratory there is complete equipment for canning, salting, pickling drying and smoking fishery products. A complete hatchery and system of rearing ponds have recently been installed and courses covering the hatching, and rearing of fishes are now offered for the first time. Although the time is only of eleven weeks duration, our location and equipment enable us to do thorough work in the subjects offered. A high school training is not necessary, for entrance, but students should be at least 20 years old.

DESCRIPTION OF COURSES.

The Fisheries of the Pacific—Two lectures per week. Professor Cobb. The history, extent and methods of the fisheries of the countries bordering on the Pacific Ocean.

Canning of Fishery Products—Two lectures and two laboratory periods per week. Prof. Cobb, Mr. Anderson and others. The theory and practice of canning, together with demonstrations on such species as are available.

Curing of Fishery Products—Two lectures and two laboratory periods per week. Prof. Cobb, Mr. Hungerford, and others. The mild-curing, pickling, dry-salting and smoking of fishery products are treated of in detail, together with demonstrations on such products as are available.

Scotch and other Methods of Curing Herrings—Eight lectures and laboratory work. Mr. Anderson.

Classification, Habits, etc., of Pacific Economic Aquatic Species—One lecture and one laboratory period per week. Prof. Kincaid.

Fish Culture—Three lectures and one laboratory period per week. Dr. Embury. The theory and practice of hatching salmon, shad, trout, whitefish, cod, lobster and other marine and fresh water species.

Pond culture—Two lectures and one laboratory period per week. Dr. Embury. The location and building of fish-ponds; the proper stocking of same; the rearing and feeding of the fish, etc.

Fresh-water Plants—One lecture and two-hour laboratory period per week. Prof. Frye. The recognition, propagation, and relative merits of those plants having an important bearing on fish culture.

Bacteriology of Foods—Two lectures and one laboratory period weekly. Dr. Weinzierl. A brief study is made of the technique of handling bacteria, but most of the time is given to the bacteriology of fermentation, putrefaction, sterilization and sanitation. Of especial value to cannery owners, superintendents, foremen and processors.

Food Laws—Study of federal, state and foreign laws regulating the sale of food products. One lecture per week. Prof. E. V. Lynn.

Elements of Navigation—Two lectures per week. Prof. Boothroyd. Compass and compass corrections. Charts and their uses. Location positions by soundings with the aid of charts. Plane sailing and coast navigation. Use of the traverse table and dead reckoning. Use of the almanac and the sextant. Latitude from noon sight on sun. An elementary course requiring no mathematics beyond a knowledge of arithmetic.

Short Course in Gas and Oil Engines for Fishermen, etc.—Two lectures per week. Prof. Wilson.

Emergencies—First Aid to Injured—Ten lectures. Dr. Hall. What to do in case of accidents; how to use bandages; the treatment of shocks, bruises, cuts, burns and poisoning. Demonstrations.

GENERAL INFORMATION.

Admission—This is without examination. The only requirement is that applicants must be at least 20 years old and must show evidence of being able to carry the work with profit to themselves. If in doubt, write.

Expenses for Quarter—

Tuition \$10.00

Deposit for each laboratory course . . \$2.00 to \$3.00

Board and lodging (per month) . . \$40.00 to \$60.00

How to Enroll—On arrival at the University, students should report at the office of the Director, Fishery Hall No. 1 where they will be given all necessary directions. As the time for the course is limited, all persons should report for enrollment on January 3, or 4, in order that all classes may begin promptly at 8 o'clock on the morning of January 5.

Attendance and Deportment—Students in these courses will be expected to attend classes regularly and in all respects will be required to observe the same rules that apply to the regular courses in the University.

Examination and Certificate—Examination will be given in the various subjects at the close of the course and a certificate showing the work satisfactorily covered issued to each student.

Special Lectures and Demonstrations—Arrangements are now under way for a number of special lectures and demonstrations by prominent men in the fisheries and allied industries.

Right to Withdraw Courses—The right is reserved to withdraw any course which has not an adequate enrollment at the end of the sixth day.

Long Courses.

The College of Fisheries also offers four and five year courses leading to the degrees of B.S. and M.S. in Fisheries. A catalogue describing all the work in detail can be had on request.

For further information address:

John N. Cobb, Director,
College of Fisheries,
University of Washington,
Seattle, Washington.

TARIFF COMMISSION CONCLUDING HEARINGS.

The Canadian Tariff Commission, which for the past three months, has been hearing evidence for and against a Canadian protective tariff, will hold its final session in Ottawa on January 3rd. The Commissioners will then prepare their report for submission to the Cabinet Council.

Several firms and individuals in the Canadian fishing industry appeared before the Commission and stated their opinion. The producers, as a whole, are in favor of a protective tariff for the Canadian fisheries.

PORT STANLEY CONCERN ASSIGNS.

The fishing industry generally regretted to learn that the Canadian Fisheries and Storage Company, of Port Stanley, had assigned for the benefit of its creditors to McLeod, Few & Co. of Hamilton. The conditions of the estate has not been definitely ascertained. The secretary and manager of the concern is Mr. H. A. Short, a widely known fish merchant and the chief shareholders reside in Toronto and in American cities. Limited capital and poor business are given as reasons for the assignment.

CANADIAN FISHERIES FOR OCTOBER 1920.**Falling off in Catch.**

The catch of all kinds of sea fish for the month of October on both coasts showed a considerable falling off as compared with the corresponding month in 1919. Last month the catch amounted to 431,724 cwts. while in October last year it amounted to 711,527 cwts. The value of the catch at the point of landing this year was \$1,375,071, as against \$3,098,812 for October of the preceding year.

The reduction in the catch is attributed to the big drop in the aggregate catch of cod, haddock, hake and pollock, which produced 129,000 cwts. less than in October last year, and to the falling off in the catch of salmon, which produced 181,000 cwts. less. Similar conditions were responsible for the falling off in the catch for September.

RACING YACHTS OR GENUINE FISHERMEN?

Says the Gloucester Times:— W. Starling Burgess is to design a defender for the Esperanto Cup to sail against the schooner which the Lunenburg men are planning. We suppose all these racing models are inevitable, but the race will lose some of its spontaneity with specially designed ships. They will tend to be more racing craft than fishermen. The best way would be to take two genuine fishing schooners out of the fleet as we did this fall.

PISCATORIAL PARAGRAPHS.

The Newfoundland herring industry is in full swing. Canadian and American vessels are loading at Bay of Islands.

The Norwegian Government have about 28,000,000 klipfish on hand. An effort is being made by the Government to dispose of old stocks on advantageous terms to Portugal, Spain and Italy.

Air-planes and dirigibles are to be used in the Newfoundland seal fisheries. They will locate the herds and report to the sealing vessels. Hangars are being constructed at Botwood, N.F.

The Northern Fisheries Co., of Pilley's Island, Newfoundland, are arranging for a big herring pack next year. Herring fishermen will be brought out from Scotland to fish in the Scotch method and the Scotch cure will be carried out in the pack. Barrels are being manufactured by the company.

There is pessimism aplenty in Canada, the United States and Canada regarding the fish business at present. We do not believe in dilating upon this run of tough luck. We'll weather it alright and there are good times ahead. Hard times always come in the wake of a world upheaval and things must be shaken down into place. Everybody suffers, more or less, when such things happen.

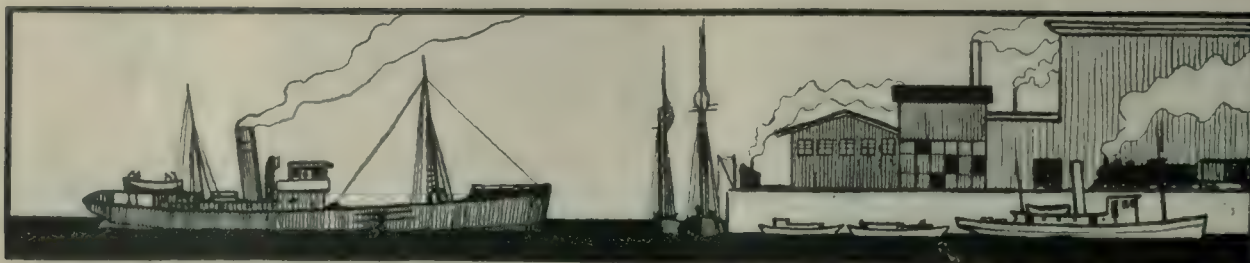
DODGE COMPANY ISSUE BOOKLET ON HEAVY OIL ENGINE.

The Dodge Sales and Engineering Co., Mishawaka, Ind., have recently issued a booklet describing the various types of heavy oil engines produced at their plant. These engines are made for work boats and range from 12½ to 75 H.P. Specialities of the Dodge Oil Engines are — no electric starters, hot plates, electric devices, high pressure air or fuel pump, priming, carburetor, spark plugs or blow-torches. Fuel consumption guaranteed at .5 lb. per B. H. P. Hour. The Dodge company will send particulars to all persons interested in their oil engines.

WILL CAN WHITEFISH AT CANADIAN FACTORY.

Canada is to add whitefish to the world's appetising canned foods. A factory for canning the whitefish of northern Canadian lakes is to be established on Lake Athabaska, Alberta. Whitefish swarm in these northern waters, but owing to lack of transportation and refrigerating facilities, they supply only a winter market. They are taken in nets lowered through holes in the ice, where they are frozen in temperatures that make all outdoors a refrigerator. They are hauled on dog sleds to the railway and shipped all over Canada. A United States market has been established in Chicago and other western cities.

In summer the industry is suspended because the fish spoil before they can go to market. Living in ice cold water the whitefish of the Canadian north have a finer flavor than those of the more southern latitudes. Canning them will give the industry an all-year market. Whitefish are one of the most extensively marketed of fresh-water fish. Vast quantities are taken in the Great Lakes and shipped all over Eastern Canada and the United States, even in summer.



Frozen Fish For France

By Doris Hemming.

Paris, November 15.

The first act of the new French President, Alexandre Millerand, upon taking office, was to sign a number of decrees designed to lower the cost of living. The first of these measures provides that intensive Government aid shall be given to the importation of frozen and chilled meat. This step will likely mean greatly increased exports from the United States and Canada. The Government will work through established commercial organizations over which a strict supervision will be maintained in the interest of the consumer. Regulation of the price of frozen meat is considered.

The second decree deals with the question of fish. The Government has decided to encourage and extend the fishing industry, by providing better boats and tackle, by improving transportation from the fishing ports to the cities, and finally by the multiplication of Government sales booths in the large cities.

So far goes the decree and no further, but a great opportunity still remains for the aggressive merchant, either privately or relying upon Government aid to carry out the good work to a more advanced point. "Can Canadian fishing companies provide us with frozen fish cheaper than the expensive varieties we are now shipping from the coast?" says a French Deputy Minister of Commerce. He believes they can.

Just as the French people have been taught to use frozen meat from Canada instead of the expensive home grown cuts, so they should be able to reduce the cost of living by eating frozen fish imported from overseas. The Minister was greatly impressed at the time in the experiments carried on by the Canadian Government through Major Hughie Green to provide frozen fish for the army in England and France. Was the experiment successful, and was it given a fair trial, he asked.

Everything depends upon the price, for unless the value of the frozen article is considerably less than that of the fresh fish on the market, it will not be able to compete. The ideal method would be to handle it in booths devoted to the purpose, and not in the regular fresh fish stores. A great deal of frozen meat is sold as fresh meat to credulous purchasers, and in any case the retailer always pushes the more expensive variety, and this defeats the aim of the movement. A group of Canadian exporters might be sufficiently interested in the question to handle the distribution at this end on efficient up-to-date lines, or they might be able to ally themselves with French business men who would undertake this part of the organization.

The City of Paris already sells food stuffs through an extensive organization of shacks put up here and

there in the streets. These "baraquements" are not fitted with refrigerators, but arrangements might possibly be made to handle frozen fish through them at first, if temporary showcases could be set up like those distributed last year by the Canadian Fisheries Association.

According to the Government official, existing cold storage facilities are sufficient to try out the scheme at least. Modern plants, owned by the Government and by private enterprise, have been built recently at Lorient, La Rochelle, Paris, and a number of other centres where fish and meat are handled in large quantities. To these will be added several more ambitious storage houses in the near future, which should provide sufficient accommodation for all requirements.

LARGE AMERICAN FISH AND OIL FIRM TO LOCATE AT NORTH SYDNEY.

Negotiations are nearing completion for the establishment in North Sydney of a branch of one of the largest oil producers and manufacturers in the world, an American institution that is now taking out a Canadian charter, and one that will mean much for the future of this port, says the "North Sydney Herald".

This is the Marden, Orth & Hastings Company, Ltd., who for a number of years carried on business here, until their plant was wiped out last summer by a fire which destroyed the offices and warehouses of the Farquhar Trading Co.

During the past several days William Schroeder, attorney-at-law of New York City, has been here in connection with the organization of the big concern. He represents the parent body, and with McKenzie & Macmillan, local solicitors for the company, has been finalizing matters. The capitalization of the concern is two million dollars, and it is their intention to have offices in various parts of the United States, Nova Scotia, as well as in Newfoundland.

Owing to the many natural advantages possessed by North Sydney, especially its excellent harbor which is practically open all the year round. North Sydney will be the principal distributing centre. Already the Company have acquired the commodious wharf property and fishing plant previously operated by James Dunne, and it is their intention to make extensive additions and alterations which when completed will be one of the finest modern fish and oil plants on the continent.

LIFE OF AN OYSTER.

The average life of an oyster is about 10 years.—
"Gloucester Daily Times."



Canadian Fishery Statistics For 1919

The Dominion Bureau of Statistics has issued a preliminary statement of the Fisheries Production of Canada, for the year 1919, prepared from the compilation of returns collected by the Bureau in co-operation with the Fisheries Branch of the Department of Marine and Fisheries. The total value of fish marketed fresh and of fish products is given as \$56,485,579, compared with a value of \$60,250,544 for 1918. Sardines and herring showed the largest decreases both in value marketed and quantity caught. The catch of haddock, halibut and cod was greater in 1919 than in 1918, while the value marketed was less. Salmon, lobsters and mackerel showed increases both in quantity caught and in value marketed. British Columbia fisheries had a value of \$25,301,607, which is a decrease from 1918 of nearly two million dollars. Nova Scotia fisheries were valued at \$15,171,929, a slight increase over 1918. Prince Edward Island, Ontario, Saskatchewan and Alberta showed increases in value, while New Brunswick, Québec, Manitoba and Yukon showed decreases.

Of the principal fish products, canned salmon is

given at 1,394,215 cases, valued at \$13,842,140 in 1919, a slight decrease both in quantity and value from 1918. Canned lobsters were reported at 128,759 cases valued at \$4,095,934 in 1919, compared with 107,812 cases valued at \$2,254,690 in 1918. The quantity of canned sardines was 119,225 cases valued at \$593,811 in 1919, compared with 177,193 cases valued at \$1,227,988 in 1918. Increases in quantity and market value are noted in dried cod and salted mackerel, and decreases in green salted cod and pickled herring. Of fish marketed for consumption fresh, the principal varieties in point of value were halibut, 240,728 cwt., valued at \$5,114,415; salmon, 460,413 cwt., valued at \$3,824,158; whitefish, 196,953 cwt., valued at \$1,845,854; lobsters, 85,340 cwt., valued at \$1,224,882. Other varieties which showed large quantities marketed for consumption fresh were mackerel, herring, cod, smelts, trout and haddock.

The following tables give a brief summary of the statistics of production for 1919 with comparative figures for 1918.

QUANTITIES CAUGHT AND VALUES MARKETED OF CHIEF COMMERCIAL FISHES. 1918 & 1919.

Kinds of fish.	1918.		1919.	
	Quantity Caught.	Value Marketed.	Quantity Caught.	Value Marketed.
Salmon, cwt.	1,531,773	\$17,869,517	1,688,653	\$17,889,913
Cod, cwt.	2,206,666	10,083,562	2,606,770	9,986,837
Lobsters, cwt.	264,096	3,531,104	345,806	5,338,343
Halibut, cwt.	207,139	5,490,226	243,449	5,119,842
Herring, cwt.	1,973,669	4,719,561	1,573,986	3,346,580
Haddock, cwt.	554,366	2,796,171	564,574	2,048,746
Mackerel, cwt.	196,781	1,937,211	229,877	2,035,849
Whitefish, cwt.	205,044	1,927,863	197,403	1,849,741
Trout, cwt.	86,608	808,770	68,670	862,966
Smelts, cwt.	87,555	971,206	75,271	835,195
Sardines, bbl.	295,770	2,320,513	214,525	830,074
Hake and cusk, cwt.	245,051	844,565	244,749	645,570
Pickrel, cwt.	70,088	649,180	61,727	582,744

KINDS OF FISH MARKETED FOR CONSUMPTION FRESH. OF WHICH THE VALUE IN 1919 WAS OVER 500,000, WITH COMPARATIVE FIGURES FOR 1918.

Kinds of fish.	1918		1919	
	Quantity	Value	Quantity	Value
Halibut, cwt.	203,379	\$5,448,546	240,728	\$5,114,416
Salmon, cwt.	291,896	3,571,865	460,413	3,824,158
Whitefish, cwt.	200,172	1,901,548	196,953	1,845,854
Lobsters, cwt.	59,251	1,273,247	85,340	1,224,882
Mackerel, cwt.	106,804	959,302	106,867	987,146
Herring, cwt.	384,390	1,502,230	173,576	868,169
Cod, cwt.	202,235	1,207,758	166,530	862,746
Smelts, cwt.	87,460	970,156	75,653	834,835
Trout, cwt.	74,236	747,455	65,151	832,481
Haddock, cwt.	191,596	950,845	130,211	537,889

**FISH PRODUCTS OF WHICH THE MARKETING VALUE IN 1919 WAS OVER \$500,000
WITH COMPARATIVE FIGURES FOR 1918.**

Kinds of fish.	1918		1919	
	Quantity	Value	Quantity	Value
Salmon, canned, cases...	1,633,789	\$14,067,249	1,394,215	\$13,842,140
Cod, dried, cwt.	520,818	5,914,891	605,135	6,811,315
Lobsters, canned, cases...	107,812	2,254,690	128,759	4,095,934
Cod, green salted, cwt.	315,855	2,471,740	278,091	1,711,431
Mackerel, salted, bbls.	38,941	960,181	46,897	1,036,199
Sardines, canned, cases	177,193	1,227,988	119,225	593,811
Herring, pickled, bbls.	139,711	1,502,807	72,428	554,473
Herring, smoked, cwt.	67,113	494,875	95,912	536,704
Haddock, dried, cwt.	72,266	697,969	56,673	531,185
Herring, dry-salted, cwt.	175,493	352,786	262,225	504,972

VALUE OF FISHERIES BY PROVINCES, 1918 AND 1919, WITH INCREASE OR DECREASE.

Provinces	1918	1919	Inc. or Dec. compared with 1918	
			Inc. +	Dec. #.
British Columbia...	\$27,282,223	\$25,301,607	#	\$1,980,616
Nova Scotia	15,143,066	15,171,929	+	28,863
New Brunswick	6,298,990	4,979,074	#	1,319,916
Quebec	4,568,773	4,258,731	#	310,042
Ontario	3,175,111	3,410,750	+	235,639
Prince Edward Island	1,148,201	1,536,844	+	388,643
Manitoba	1,830,435	1,008,717	#	821,718
Saskatchewan	447,012	475,797	+	28,785
Alberta	318,913	333,330	+	14,417
Yukon	37,820	8,800	#	29,020
Totals	\$60,250,544	\$56,485,579		\$3,764,965

DOMINION FISH HATCHERY RECORDS FOR 1920.

Ottawa, Dec. 2.—Fish hatcheries operated by the Fisheries Branch, Department of Marine and Fisheries, Ottawa, have distributed in 1920 three-fourths of a billion fry, in the various provinces throughout the Dominion. The greatest distribution took place in the province of Ontario, the number of fry distributed being approximately four hundred million.

The largest distribution of any one species was the valuable whitefish, of which more than four hundred million were released. About half of these were distributed in the Great Lakes and the balance in Manitoba. Pickerel came second to whitefish. Of this species 120,000,000 were distributed in the Great Lakes and 25,000,000 in Manitoba.

Sockeye salmon, the most valuable of all the Pacific species came third, there being a distribution of more than ninety million. This is the largest distribution of sockeye fry that has been made for some years and was an increase of more than forty million over the year 1919.

A considerable increase was also effected in the distribution of fry of the sporting varieties of fish, such as the rainbow and cut-throat trout in Alberta and speckled trout in the Maritime provinces. The distribution of fry by provinces is as follows:—

Nova Scotia—			
Atlantic salmon	6,487,750		
Rainbow trout	105,000		
Speckled trout	428,403	10,511,847	
New Brunswick—			
Atlantic salmon	10,083,444		
Speckled trout	428,403	6,757,750	

Prince Edward Island—			
Atlantic salmon	860,140		
Speckled trout	124,265	984,405	
Quebec—			
Atlantic salmon	2,376,585		
Speckled trout	179,633	2,556,218	
Ontario—			
Spring salmon	433,200		
Whitefish	205,662,500		
Salmon trout	20,401,252		
Herring	40,800,000		
Pickerel	120,400,000	387,696,952	
Manitoba—			
Whitefish	201,111,250		
Pickerel	25,353,600	226,464,850	
Alberta—			
Rainbow trout	607,660		
Cut-throat trout	432,752		
Salmon trout	174,441	1,214,853	
British Columbia—			
Cut-throat trout	172,075		
Steelhead salmon	107,254		
Kamloops trout	238,805		
Sockeye salmon	90,175,819		
Albino salmon	4		
Spring salmon	3,951,203		
Kennerly's salmon	1,035,000		
Cohoe salmon	2,243,388		
Pink salmon	4,264,000		
Chum salmon	584,000		
Speckled trout	6		
Whitefish	11,517,000	114,286,554	

Who's Who in the Fishing World

Hon. Fred Magee.

Appointed a Minister of the Crown just before the provincial elections in New Brunswick, on October 9th, 1920, Hon. Fred Magee led the Foster Government ticket in the county of Westmoreland, and was returned at the head of the polls after a rather strenuous contest with a ticket put in the field by the United Farmers and Independent Labor party of New Brunswick. As two of Premier Foster's ministers went down to defeat in the elections, the victory of the new minister was no mean achievement, especially when it is

Although the fishing industry is of considerable importance to this Dominion, it is not usual—it is unfortunately very unusual even in the Maritime Provinces—for a man, actively engaged in the fish business, to arrive at the dignity of a Minister of the Crown. Perhaps the fishing interests have been too busy to push their claims in the political world. In any case the fishing interests have not exercised much political influence, and the provincial governments have done little or nothing to encourage the development of the



considered that the United Farmers and the Labor party had the support of the old line provincial Opposition. Whatever part the policies and record of the Foster Government may have played in the election, there is no doubt that Mr. Magee's reputation as an able business man, his genial personality and previous public activities, were important factors in winning for him the favorable judgment of the electors of his constituency.

fishing industry, though they have done much to encourage the development of agriculture, now that the farmers, who were taught the value of organization by the provincial governments, are reaching out for political power, it is not unlikely the people engaged in the fisheries will follow their example and organize for action on the political field.

Hon. Mr. Magee has no portfolio, but still his position is one of influence as well as of dignity, and it is

not unlikely that the interests of the fisheries of New Brunswick will receive in future greater attention than they have in the past.

The Nova Scotia Government has recently appointed a Director of Fisheries, and the New Brunswick Government might do worse than to institute an enquiry as to why the provincial fisheries showed a decline last year. If technical education will help in the solution of the problem of developing the fisheries of New Brunswick, Mr. Magee may be trusted to give the matter his attention. According to the *St. John Times*, Hon. Mr. Magee is the father of technical education and vocational training in New Brunswick. Mr. Magee was elected to the Legislature of New Brunswick in 1916, and at the first session he made a very strong speech in the House, advocating provision for technical education and vocational training for the young people of the province. As a result of his energetic advocacy the Foster Government promptly appointed a committee, with Mr. Magee as chairman, to submit a report on the subject. This committee made an investigation of the systems of technical education in the other provinces and in the United States, and at the next session of the Legislature it submitted a report, and also a bill providing for the introduction of technical education and vocational training in New Brunswick. The House adopted the bill, and a Provincial Board, with Mr. Magee as chairman was formed, and empowered to establish facilities for technical education in the province. Although only a little over two years have elapsed since this Board was formed, provision has already been made for the technical education and vocational training of more than 1,000 young people, and the work of the new schools has attracted a great deal of favorable attention. "The service rendered by Mr. Magee in connection with this great forward movement in education in the province has been of the highest value," observed the *St. John Times* when commenting on the appointment of Mr. Magee as a Minister of the Crown.

When Premier Foster called upon Mr. Magee to enter his government, his action was received with general satisfaction throughout the province. The *St. John Globe*, perhaps the most influential journal in the province, strongly commended the appointment, and said: "A successful business man, Mr. Magee, quietly took an outstanding place in the Legislature, establishing himself in the confidence of the public. He brought to the consideration of all legislative problems the level-headed, practical knowledge of a keen, progressive and broad-minded man of business, desirous of doing right and having rights done. His call to the government is a guarantee that the Premier is determined to have the advice of the ablest and strongest men in the House and assurance will rule the deliberations and actions of the government."

The *St. John Standard*, an Opposition organ, which seldom allows any merit in its political opponents, was constrained to say:

"The Hon. Fred Magee is one of the soundest business men on the Government side of the House, and his appointment will strengthen the Foster administration."

Mr. Magee is president of Fred Magee Ltd., which carries on an important fish business with headquarters at Port Elgin, N.B., and is interested in other enterprises.

B. C. HATCHERIES HAVE IMPROVED FISHERIES, STATES SUPERINTENDENT RODD.

The flourishing condition of the spawning beds in the districts where hatcheries are operated in British Columbia, in comparison with the condition of the beds where hatcheries are not located, is convincing evidence of the benefits that are being derived from artificial fish culture in that province, declares J. A. Rodd, Superintendent of Fish Culture, Ottawa.

This season there is an extremely heavy run of sockeye to the Birkenhead river, and while the final returns are not in from the other localities on the lower part of the Fraser, where hatcheries are operated, there is an increased run in all streams. In comparison with this very satisfactory condition, the upper reaches of the Fraser are almost barren of spawning fish.

At Rivers Inlet the pack of salmon this season exceeded all previous records; 151,273 cases of sockeye were put up as against 44,936 cases in 1916, and 61,195 cases in 1917.

In the Anderson lake and Kennedy lake districts, Vancouver Island, a larger number of salmon are on the spawning grounds than has been the case for several years past.

When hatchery operations were commenced, fifteen years ago at the Lakelse lake hatchery, Skeena River, difficulty was experienced in filling the hatchery, which at that time had a capacity of about four and a quarter million eggs. This season nearly 8,000,000 eggs were collected, and in addition the natural spawning grounds were remarkably well-seeded. It is estimated by the local officers that sufficient salmon entered Lakelse lake this season to supply at least three times the previous collection of any single year. The abnormal freshets, however, damaged the fences, and a large number of the earlier salmon ascended and dispersed to the spawning grounds at the head waters of the different creeks where they could not be secured for hatchery purposes. A tremendous run of salmon has also been established in the creek that supplies the Babine hatchery with water, and in some recent years the full supply for the hatchery of some 7,000,000 eggs has been taken in this comparatively small stream.

The condition of both the Skeena and the Fraser rivers this season is very encouraging. In the first mentioned not only was the pack of salmon greater than that of 1916, the corresponding year of the preceding four years' cycle, but a larger quantity of eggs was collected for the hatcheries, and in addition the natural spawning grounds were well-seeded. Salmon were again seen in the Shuswap district in considerable numbers, and it is estimated that there are more salmon on the spawning grounds than there have been since 1908.

According to Mr. John P. Babcock, Deputy Commissioner of Fisheries for British Columbia, more sockeye salmon passed through Hell's Gate in the Fraser River Canyon above Yale and reached the spawning beds of the upper lake section of the Fraser basin than in any other season during the last five lean years.

SCHOONER RACES GRAND PUBLICITY.

The fishing schooner race was productive of first-class publicity, not only to the fisheries of Nova Scotia, but to the whole Canadian industry.

French Fish Export Embargo

By COLIN McKAY.

The announcement that the Government of France had decided to prohibit the export of fish, made in the press despatches recently, is of more than passing interest to Canada; that is, if the report is true. So far I have noticed no reference to the matter in *La Pêche Maritime* and I imagine such an important change in French fishing policy would occupy the attention of that little journal for more than one or two issues which have not turned up. That the Government of France in the hope of helping the situation created by the abnormal increase in the cost of living has been considering for some the matter of prohibiting the export of certain foodstuffs is well known, and it is very probable that it has prohibited the export of certain varieties of fish.

If the Government has placed an embargo on the export of all kinds of fish, then France has reversed a policy of encouraging the export of fish which has been followed for many years; and the consequences should be of considerable importance to Canada and Newfoundland and help to remove the spirit of pessimism which appears to have settled on the fishing industry.

In order to encourage the deep sea fisheries and assure a supply of skilled seaman for its naval reserve, France has for many years paid bounties to vessel owners as well as to fishermen, the bounty going to the vessel owner being based on the amount of cod exported to foreign countries. In his book *La Pêche Maritime*, Joseph Kerzoncuf, who recently resigned from the position of Chief of the Fisheries Service, says that over a period of years before the war the bounties paid in connection with the deep sea fisheries

represented about ten per cent of the total value of the catch of these fisheries, and that the exports upon which the vessel owners received bounties averaged twenty-four per cent of the total quantity of cod taken by the deep sea fishermen. France's most important markets for salt cod were Italy, Spain and Greece; on the average she sold to Italy 10,000,000 pounds of cod; to Greece 3,000,000 pounds and to Spain 2,500,000 pounds. The French bounty system gave French cod an advantage of ten per cent in the markets of these and other countries.

If the French Government has reversed this old policy and prohibited the export of fish, then Canada and Newfoundland have a bountyfed competitor the less in the markets of the southern Europe. Unfortunately it does not follow that they can gain any immediate advantage thereby, because the exchange situation restricts the purchasing power of Europe. But if this change in policy has been made, a return to the system of paying bounties on the export of fish is unlikely, and Canada may hope to obtain a better position in future in the markets of southern Europe when its demand for fish there becomes more effective. And this it must do in some way for the replenishments of the cattle herds of Europe must take time. The French Government is now working on plans for the encouragement of the fisheries, but these have for their object the provision of a greater supply of fish for home consumption. And there has been much criticism of the old French fisheries policy, which was based on the idea that the fishing fleets were a nursery of the navy. It is claimed in some quarters that this policy has outlined its usefulness, since modern navies require skilled mechanics rather than sailors.

Cold Storage Investigations

By Dr. A. G. HUNTSMAN.

There is perhaps no subject connected with the fishing industry of more importance than cold storage. In this country the demand is predominantly for fresh as opposed to cured fish, and it is only by refrigeration that our fish can be kept fresh through the period of transportation and handling from the producer to the distant consumer, as well as through the year from one producing period to the next. It is a matter of regret that the current methods of fish refrigeration are not perfectly successful, and that from time to time complaints are made of more or less heavy losses of fish in cold storage. These complaints have been the stimulus for investigations of the changes that take place in fish during refrigeration.

Clark and Almy of Philadelphia have recently been studying the chemical changes that occur in weakfish and bluefish. The fish were frozen in air at a temperature of 5 deg. F. and were later kept at a temperature of 15 deg. F. Untreated fish became un-

marketable in four months owing to drying and consequent shrinkage. When wrapped in semi-parchment paper the loss of moisture was not quite so rapid, but still considerable. Repeated glazing, although it did not altogether prevent evaporation of the water, nevertheless held it back to a considerable extent, so that the fish were little altered in appearance even after the lapse of ten months. Nevertheless, changes had taken place in the fish, for there had been a definite loss of moisture. However, in fish kept in storage for two years the loss was not so great during the second year as during the first. They believe that even less change would have taken place if the temperature had been 5 deg. or 10 deg. F. lower, as is usually the case commercially.

The proportions of the various foodstuffs in the fish showed no appreciable changes, yet changes in the character of these foodstuffs did take place. The proteins or "lean" part of the flesh became altered

so that more amino-acid, amine and ammonia were found, the result, doubtless, of the breaking down of the complex proteins, this indicating that to that extent the fish had aged or become stale. On the whole, the bluefish were more affected than the weakfish, which were fatter than the former. Whether these alterations were due to autolysis, that is automatic changes in the flesh, or to the action of bacteria, could not be stated. Some of the weakfish were put in storage "in the round" without removing the viscera, that is ungutted. Comparison with others that had been gutted but otherwise treated the same, showed that the alteration was greater in the ungutted fish. Yet up to 13 months the ungutted fish were practically no staler than those that had been gutted.

The most striking effect of storage was shown by the fat or oils, and naturally it was shown more by the fat weakfish than by the lean bluefish. The change consisted in a marked increase in the "acid-value" of the fats, which began to be most noticeable after 8 months or a year in storage. Glazing or wrapping the fish seemed to have no effect upon it. This ageing or staling process in the fats, was necessarily slow at such low temperatures, so that there was no rancid flavour even after a year in storage.

The flavour of the cooked fish showed no indication of these ageing processes during the first 13 or 16 months of storage, but after longer periods there was an undesirable change in the flavour. After two years storage both kinds of fish became distinctly unpalatable, although it should be noted that less change would probably have been observed if the temperature had been nearer the usual commercial one.

EATS FISH THAT IS SEVEN YEARS OLD.

Inventor says he has discovered process of preserving fish for indefinite period.

An electrical process for the preservation of fish for an indefinite period, and in such a manner as to maintain all its nutritive properties is an invention of a fish merchant in Grimsby, England, that has attracted considerable attention.

The fresh fish is apparently submitted to a process which instantly drives every particle of moisture out of it, and makes it as dry as a bone, and as hard as a rock. In this condition it is impervious to the ravages of time, yet on being immersed in water for three days it becomes like fresh fish again.

While the scheme has not been demonstrated in this country, the inventor has secured patents in all countries, and is apparently satisfied with the success of his invention. The value of the invention, it is suggested, lies in the fact that the great quantities of fish caught, and hitherto wasted, or thrown back into the sea because of a glut or because of no market at all, can be rapidly cured and made available for sale throughout the country at a cheap rate.

In its dried form it seems the fish can be milled to a fine flour, which, the inventor says, upon being mixed with water assumes the properties of the original fish.

To demonstrate the efficacy of this scheme the inventor recently dined upon cod caught seven years ago, and dried in his early experiments.

WESTERN FISH HATCHERIES INSPECTED.

Fisheries Engineer, Mr. Chas. Bruce, has recently returned from an inspection of western hatcheries and reports prospects promising for a successful season.

At Dauphin River and Gull Harbour on Lake Winnipeg, where the Department operated large hatcheries for the propagation of white-fish, everything was in readiness for the coming operations. The pound-nets that are operated by the Department at Dauphin River for the capture of parent fish were set and ready to fish at a moment's notice, and the enclosures in which the fish are held until ready to spawn were in position. Both these hatcheries have been thoroughly repaired during the summer, and the buildings at the former repainted.

At Dauphin river a survey was made under the direction of the Public Works Department for a much needed wharf and construction is now being proceeded with by that Department.

The hatchery at Winnipegosis is also underwent extensive repairs during the summer. All equipment is now in good condition and nets were being operated for the retention of parent fish.

The Qu'Appelle hatchery on the Qu'Appelle lakes was thoroughly repaired and a new brick chimney erected to replace the iron stacks that had rusted out.

At Banff hatchery surveys were made with a view to enlarging the ponds for the rearing of fish beyond the fry stage. This hatchery is situated in the Dominion Park at Banff, and is one of the chief attractions to tourists at that place.

RECORD OF BANFF HATCHING.

The Banff hatchery during the season 1920 released in splendid condition 1,214,724 fingerlings, consisting largely of rainbow trout and cut-throat trout. All these fish had been under the care of the hatchery. The distribution also included 175,000 Atlantic salmon, distributed in Lake Minnewanka. This distribution of fingerlings doubled that of 1919, and is the largest and most successful distribution that has been made for a long time.

RECORD WHITEFISH EGG COLLECTION.

The largest previous collection of whitefish eggs in Georgian Bay for the Collingwood hatchery was exceeded this year by 10,000,000. These eggs were all taken at French river, 80,000,000 were placed in the Collingwood hatchery, and 10,500,000 transferred to the Kingsville hatchery, Lake Erie.

The collection in 1919 amounted to 54,060,000.

NEWFOUNDLAND COD CATCH.

The catch of cod is estimated to be materially less than last year, but as the season is later than usual, is it not yet known what prices the fish will fetch. Values during the past season show a decline and foreign markets for dried cod are irregular.

Weather conditions during the collection of sockeye eggs in Babine lake district this season were unusually bad, and the run of sockeye salmon to the head of the lake was not up to the average of recent years, consequently the collection of eggs for hatchery purposes was not as large as last season. It is encouraging, however, to note that although the collection was not as large the spawning grounds in the district were well-seeded naturally.



PACIFIC COAST SECTION

"The Canadian Fisherman," Pacific Coast Branch, will be glad to have inquiries from any one who wishes information in any way connected with the fishing industry. We would also appreciate items of fishing news suitable for publication.

Address communications to F. E. Payson, Pacific Coast Representative, Industrial & Educational Press, Ltd., 528 Winch Building, Vancouver, B.C., Canada.

IT WILL BE CHIEF INSPECTOR OF FISHERIES, J. A. MOTHERWELL, AFTER DECEMBER 31st.

Confirmation of the appointment of Major J. A. Motherwell as Chief Inspector of Fisheries for British Columbia has been received in Vancouver from the Department of Marine and Fisheries. Major Motherwell succeeds Col. F. H. Cunningham whose retirement takes place December 31st.

The appointment which is most logical and a very popular one is not a surprise to those engaged in the industry as the appointment was forecasted by Hon. C. C. Ballantyne, Minister of Fisheries during his visit here last Fall.

Ever since his connection with the department, which dates back to 1914, Major Motherwell has been a most competent official and has carried on his duties with great conscientiousness, and to the satisfaction of all concerned and his promotion is well deserved. In 1916, Major Motherwell went overseas with the 131st New Westminster battalion and in 1918 he was invalided home after being badly wounded while in active service.

The Canadian Fisherman wishes all success to the Major upon the appointment to his new position.

INSPECTION OF FISH CANNERIES SECTION OF THE MEAT AND CANNED FOODS ACT TO BE ENFORCED.

No special inspection ruling has been made as regards canned fish, but the Dominion Fisheries Dept. has decided to enforce the present section of the Meat and Canned Foods Act as applied to the inspection of canneries, and the intention now is to have a sufficient number of inspectors available to inspect each cannery at all times during the canning season.

If this act is properly enforced as regards the canning of fish there is no reason why any pack of canned fish, when carrying with it a guarantee of inspection under the Canadian Meat and Canned Foods Act, should not have the same standing as all other government inspected foods.

When such an act is on the law books of the country it is a waste of time to put forth efforts to have new regulations made unless as in this instance an additional paragraph was desired whereby any canner could have his pack marked by the government inspector with the government brand, but apparently the majority of the canners did not wish this.

The enforcing of this act means the sanitary packing of first class fish under the most sanitary conditions, and if necessary the Minister has the power to close a cannery that is not complying with the regulations and not allow the fish that have been canned therein to be inspected.



MAJOR J. A. MOTHERWELL.
Newly Appointed Chief Inspector of Fisheries for British Columbia.

By the proper enforcement of this act a long step forward has been taken toward placing British Colum-

bia canned salmon on a standardized basis as to quality. Every advantage should be taken of the information that this enforcement is in effect in advertising the quality of future packs of B. C. Salmon. No matter how many inspections are made by the representatives of the buyers the fact that the different packs have passed the inspection of the government inspectors will have weight in guaranteeing quality of the fish packed both before and after going into the cans.

REARING PONDS FOR SALMON FRY.

Every hatchery superintendent in British Columbia has instructions to make a thorough inspection of the district in the vicinity of the hatchery which he has charge of with the view of locating any barren lakes or other bodies of water that will be suitable for turning into rearing ponds for salmon fry.

Every hatchery wherever possible will have its rearing ponds and these will be stocked with as many fry as it is possible to handle in a proper manner, if the plans are carried as now laid down by the Dominion Fisheries department. The department officials are taking the matter of rearing ponds up in the most energetic manner and it is hoped to accomplish much along these lines by next Summer.

There is an enormous amount of detail to arrange in connection with the installing of rearing ponds in any number one item alone being food supply as the young fry require food of certain kinds and this must be on hand at all times to keep up the regular feeding. Just as soon as such arrangements are once made the matter of carrying on the work will be quite simple. It will take some time but the principal item has now been accomplished and that is to have the government inaugurate the new system on a scale that is bound to bring results.

ANOTHER CONCRETE RESULT OF THE CONVENTION.

As a direct result of the discussion of methods in the rearing of salmon fry at the Canadian Fisheries Association Convention held in Vancouver last June, the Dominion Fisheries Department has now inaugurated plans to have rearing ponds in connection with every hatchery in British Columbia wherever possible. Everyone knowing the discussion that was rife at the time previous to the holding of the convention regarding hatchery methods, and now seeing the results obtained by having a frank discussion of such subjects at a convention where every one has a chance to air his ideas, may well feel the Association accomplished a lot in connection with this subject alone.

STEELHEAD FISHING TO BE ALLOWED ON FRASER RIVER.

Beginning Wednesday noon, December 8th, Steelhead salmon may be taken in the Fraser River. This was the announcement recently made by the Dominion Fisheries Officials. The River was closed to salmon fishing during the past few weeks to allow the chums and cohoes to reach the spawning grounds. The reports show that many of these fish did reach the spawning grounds and that now there can be no harm in again throwing open the river for these special varieties. The fishermen have been protesting against the closed area for sometime.

NEW FISHERY REGULATIONS FOR 1921 SEASON IN BRITISH COLUMBIA.

The following memorandum gives briefly the changes in the Fishery Regulations for British Columbia during the year 1921:

1. **Cod Fishing.** There will be a closed season from January 15th to March 15th, both dates inclusive, during which the taking of cod in the Gulf of Georgia and adjacent waters between the American boundary on the South and a line drawn approximately East and West from Duval Point, Johnston's Straits, to the Westerly entrance of Wells Pass, will be prohibited.

2. **Naas River Fishing Boundary.** The outside boundary in the Naas River for the purpose of Sockeye Salmon gill-net fishing for the season 1921 will be a line drawn from Boston Islands to Parkin Island.

3. **Size of Smelt Net Meshes.** The present regulations provide for a mesh in smelt gill nets and seines of 1 1/4" in the former and in the latter of 1 1/2" in the wings. The amended regulations call for a mesh of not less than 1" in both varieties of nets.

4. **Salmon Gill Nets, (Size of Mesh).** The present regulations call for a mesh of not less than 7" for salmon fishing other than sockeye. The regulation has been amended to permit of a mesh of not less than 6 1/2" extended measure.

5. **Salmon Drag-Seines.** The present regulations provide that the size of a salmon drag-seine shall not exceed 300 fathoms in length and the mesh 3" extension measure. The amended regulation limits the length of such drag-seine to 100 fathoms and also limits the depth to 180 meshes.

6. **Licenses to Captains of Seining Boats.** In the past Captains of seine boats were not licensed. The regulations for next year provide that all such Captains must obtain a license from the Fisheries Department before commencing operations. In order that an applicant may obtain such license he must be a British subject.

7. **Refund of License Fees.** During the season 1921 no refunds of license fees will be entertained.

8. **Salmon Traps.** Apart from the waters contiguous to the American Boundary at the South end of Vancouver Island and Portland Inlet no salmon trap-net licenses will be issued.

Your correspondent is able to give a few notes in further explanation of the above new regulations as follows:

No. 2. The new boundary is about 5 miles South of the present Boundary.

No. 4. This means that coho fishing may now be done with 6 1/2" mesh nets.

No. 5. This ruling is along the lines of conservation of the fish. This will allow Lowe Inlet and Alert Bay (Nimpkish) to be operated with drag-seines. Licenses to be granted to any applicant, but all the members of the crews must be Indians. The area of No. 21 has been extended to include the waters between Port McNeil and Beaver Cove, which in 1921 can be fished with purse seines in suitable locations.

No. 6. These licenses must be obtained prior to the opening in 1921.

No. 7. This ruling is made in order to ensure the operation of all licenses issued in 1921.

[illegible]

PACKED BY DISTRICTS, PREVIOUS YEARS

D. H. ROSS AUSTRALIAN TRADE COMMISSIONER ON CANADIAN FISH IN AUSTRALIA.

In line with its up-to-date commercial intelligence, the weekly bulletin of the Department of Trade and Commerce, dated November 22nd, No. 877, has a most exhaustive article entitled "Australian Market For Fish Products", by Australian Trade Commissioner D. H. Ross. The writer had the pleasure of assisting Mr. Ross in placing much valuable information before the members of the fishing industry in British Columbia while he was in Vancouver just about one year ago. One remark that Mr. Ross made impressed all that heard it and that was sell your goods as "CANADIAN GOODS". Not any one section but as a whole no matter what section they are produced in, as the Australian knows Canada as a whole. This statement was not only a statement of fact, but it was also a statement along strong national business lines.

The article referred to is most exhaustive and should be read carefully by every one in the industry that is interested in the market of our sister dominion. With the new Government line now in operation, and plenty of refrigeration space to be had there is no excuse if the Canadian Fishing firms do not build up the market that is open to them.

Such reports are worth a great deal and Mr. Ross deserves great credit in compiling the amount of information contained in this one. Another thing to bear in mind is that all the trade commissioners are only to ready to furnish information to those who will write for it, and Mr. Ross spoke of this particularly when he was in Vancouver.

If you have not received the weekly report referred to you should write for it.

NO MOTOR BOATS FOR NO. 2 DISTRICT FOR 1921.

After careful consideration of the question the Dominion Fisheries Department has decided that there shall be no change in the regulations as to the operations of motor boats in district No. 2. This takes in the Skeena River fishing area.

WHY MAKE DOUBLE HANDLING OF ORIENTAL SALT HERRING NECESSARY?

With the majority of the salt herring pack for the Orient packed on Barclay, why should it be necessary to bring the finished product to Vancouver at an extra cost of \$5.75 per ton, when this rate might be saved by having the Trans-Pacific steamers call at Barclay Sound? Every dollar saved at this end will mean an incentive to have the demand for this product increased. This season has seen a more concerted plan for the standardization of the Oriental salt herring pack, and if this movement among the white packers continues, and all parties get together and create some plan whereby the prices may be stabilized for the next season's pack, there will spring up an industry that will rival the canned salmon industry as to volume.

Like every other industry that has been organized on a business basis, where all concerned work in unity the firms engaged in this industry may create a demand far in excess of any yet shown, when they are able to show a standardization pack handled under proper conditions and through the right channels of trade. As the writer stated in a previous issue of the "Canadian Fisherman," the closer the packers can get to the consumer and, at the same time, have proper distributing arrangements made, the surer they will be of stabilizing the prices of their product. By this

is not meant the elimination of the broker or wholesaler who has proper connection in the Orient, but the elimination of that broker who has no connections there but who will sell to some firms in San Francisco, Portland or Seattle and, therefore, create a fictitious price.

If arrangements can be made for Trans-Pacific steamers to call at Barclay Sound, there will be very little chance of rate cutting in this respect, as the packers would much prefer to ship by a standard line than by some tramp line, on steamers which could give no guarantee of careful stowing of the cargo for arrival in proper shape. The conditions regarding rates this year are in keeping with other unsettled conditions.

"ONE FEELS INCLINED TO ASK WHAT KIND OF AN EMPIRE IS THIS ANYWAY?"

MR. F. C. WADE'S QUESTION.

The following is a copy of the letter addressed by Mr. F. C. Wade, Agent General for British Columbia to the London Times. The entire subject matter is well worth consideration by all concerned in trade with the Mother Country.

November 22nd, 1920.

Dear Sir Campbell Stuart,

With a view to calling attention to the pernicious preference by the United Kingdom of the United States over Canada in commercial matters, I suggested to Col. Grant Morden that he put a question on the paper in the House of Commons. This was done and I enclose question and reply as they appear in Hansard.

Unfortunately the question was overlooked or ignored by your Parliamentary reporter and the publicity sought for was lost.

The present situation is about as follows: We hold pretentious dinners at which we extol the advantages of Empire and the benefits of inter-Imperial trade.

That is the post-prandial side.

The Practical Side is Rather Different:

Embargo on Canadian cattle;

Control of Canadian bacon;

Control of Canadian fruit;

Control of Canadian salmon;

British trade with Canada transacted through United States Agents in New York.

In other words, a very fair attempt to exclude Canada from the British market and from participation in British business.

There is Still Another Side:

No control of United States canned meats;

Complete freedom to Germany to flood the country with toys and everything else that might afford work for our unemployed, a quarter of a million of whom saved the country from German savagery.

It will not do to reply that the control of necessities is required to keep prices down. Look at wheat!

One feels inclined to ask what kind of an Empire is this anyway?

Even at this late date, if there is any way of getting publicity in "The Times" for Colonel Grant Morden's question and answer it would no doubt be very useful in calling attention to a stupid and unpatriotic practice which cannot be too soon ended.

Yours very truly,

(Sgd.) F. C. WADE.

Agent General for British Columbia.

Sir Campbell Stuart, KBE.

Managing Editor, "The Times",

Printing House Square, E. C. 4.

(EXTRACT FROM BRITISH PARLIAMENTARY HANSARD.)**Trade with Canada.**

LIEUT. COL. MORDEN asked the Parliamentary Secretary to the Overseas Trade Department if he is aware that it is the practice of many of the manufacturers and business firms of the United Kingdom to transact their Canadian business through New York or other American agents instead of appointing Canadian agents for British-Canadian business; if he is aware that this is resented in Canada and is leading to loss of orders that would otherwise come to the United Kingdom; and whether he will take steps to bring before British business firms the importance, both from the Imperial point of view and for their own benefit, of utilizing the service of Canadian agents.

MR. KELLAWAY: This matter has been engaging my attention for some time past. The Department's representatives in Canada have been asked to call attention to cases where trade is lost to this country as a result of the employment by British firms of United States agents for the purpose of trade with Canada. Representations have been made to some of these firms, and as a result they have substituted Canadian agents. Every opportunity is being taken of bringing to the notice of manufacturers and merchants concerned the advantage of transacting Canadian business through Canadian agents.

PLANNING TO BUILD UP FRASER RIVER IN SECTIONS WHERE RUNS HAVE BEEN DESTROYED.

At an informal meeting held in Seattle Nov. 19th and 20th, at which were present canners from Puget Sound, Alaska and British Columbia, as well as fishery officials and others interested in the salmon industry, matters of importance to every one concerned were discussed.

Messrs. Henry Doyle, of the Northern B. C. Fisheries Ltd., and Mr. H. B. Bell-Irving, of the H. Bell-Irving Co. Ltd., of Vancouver, B.C., represented the British Columbia canners.

The matter which was taken up of most importance to those engaged in the salmon canning industry in British Columbia, and this takes in every one that is at all interested in the industry, whether they are fishermen, cannerymen or firms furnishing the industry with supplies, was that of the suggested plan to build up the upper reaches of the Fraser River above Hell Gate. Mr. Henry Doyle, who takes a great interest in all matters connected with the propagation of salmon, has done much to arouse the interest of all who are interested in the rebuilding of the sockeye run on the Fraser, and he deserves great credit for bringing this matter to a head.

After a careful discussion of the entire matter the meeting decided that the services of Mr. R. E. Clanton, Fish Warden for the State of Oregon, should be secured to make a survey of the upper reaches of the Fraser River with the idea of establishing a system of rearing ponds, similar to those now being operated at the Bonneville Hatchery in Oregon. With such rearing ponds in operation, it is felt that it would only be a matter of time before the sockeye run on the Fraser, would again be as large as it ever was and in fact far exceed previous runs. It was agreed that the expenses of this survey would be borne by those engaged in the industry both in the state of Washington and British Columbia.

The survey will be made as early in the Spring as it is possible to cover the ground. If it is found feasible to carry out the project it is planned to commence operations at once and secure the eggs from the 1921 fish, which is the year of the big run, and then results would be secured by 1925 or in the year of the next big run.

It was at Hell Gate that the big slide took place, which many believe was the real cause of the big depletion of the sockeye in the Fraser, and it is above this point in the upper reaches of the River that it is planned to carry out the project which, it is hoped, will result in a revival of the big cannery operations on the river.

Previous numbers of the "Canadian Fisherman" have contained descriptions of the methods employed at Bonneville Hatchery and the rearing ponds attached to it. It means that the young fry are held in the rearing ponds until they are at least a year old, and then they are large enough to take care of themselves on their way down the river, after they have been released.

PROPOSED THAT TRAPS ON AMERICAN SIDE BE NOT OPERATED NEXT SEASON.

At the meeting of the canners held in Seattle Nov. 19th and 20th, a resolution was adopted that traps be not operated in American waters next season on the condition that the present holders of trap licenses be granted an extension of their privileges for one year. The two principal reasons for the passing of this recommendation were that the canning interests were overstocked with salmon, particularly the cheaper grades, and also it was to the interest of the industry that more fish be allowed to reach their spawning grounds.

CAPT. D. BARRY PURCHASES THE PAULINE J.

After ten years as Captain of the steam halibuter *Celestial Empire*, Capt. D. Barry decides to become skipper of an independent fishing boat, and has purchased the gasoline boat *Pauline J.*, 51 feet over all, 12 foot 7 inch beam, and with a depth of 7 feet; the *Pauline J.* is powered with a Union gasoline engine. Of sturdy construction she will answer for halibut fishing, towing or charter work.

Capt. Barry has many friends both in Vancouver and Victoria and is a well known figure along the water front. Twenty-nine years on the coast here the Captain is one of the old timers. Beginning in 1891, the Captain spent seven years sealing out of Victoria, then three years in the Klondike and after that halibut fishing, the past ten years of which he has been captain of the halibut steamer *Celestial Empire*, first when operated by the Canadian Halibut Co., and since the steamer was purchased by the Canadian Fishing Co. Ltd., he has been in their service.

Captain Barry's many friends wish him well in his new venture.

NEW SMOKE HOUSE FOR VANCOUVER.

Mr. Charles Anderson is preparing to build a new smoke house at the Foot of Gore Ave., in Vancouver. Mr. Anderson had his plant destroyed by fire some time ago and has been operating in temporary quarters at the Foot of Gore Ave. One of the old timers in the industry in Vancouver Mr. Anderson turns out one of the best lines of cured fish on the market.

PRINCE RUPERT FISHING NOTES.

Little news to report with regard to the industry at this time. The small halibut vessels are nearly all tied up for the winter months and the only vessels fishing are the big Seattle schooners. These vessels are bringing down the usual big winter hauls of thin spawnly halibut from the Northern Alaska grounds.

The Booth, Pacific and Atlin Fish Companies have received notice to vacate their present quarters on the G. T. P. Dock and all three have arranged with the Provincial Government for space on their dock which has recently been extended. The notice to move expires this month but it will be well into January before the new fish houses are ready. A big ocean dock extending for about 1,000 feet is to be erected by the G.T.P. starting from Booth's location — this is the reason for the three companies being given notice to vacate.

TRAWLER JAMES CARRUTHERS BEING REPAIRED AT VICTORIA.

The trawler James Carruthers which collided with the U. S. S. Surveyor some weeks ago and afterwards was beached to escape sinking will require a new stern and stern frame, new keel and fifty steel plates.

She is now in dry dock at Yarrow's shipyard in Victoria where the repairs will be made. Owing to the financial difficulties that are being encountered at the Prince Rupert Dry Dock this move was necessary.

MAJOR MOTHERWELL RETURNS FROM OTTAWA.

Major J. A. Motherwell, Asst. Chief Inspector of Fisheries for British Columbia returned from Ottawa the first week in December where he has been on official business with the retiring Chief Inspector F. H. Cunningham.

Matters in connection with the 1921 regulations were taken up while the officials were at headquarters.

Major Motherwell did not receive official notice of his appointment to the office of Chief Inspector, which takes place on Jan. 1st until after his return to Vancouver.

COL. CUNNINGHAM MAY MAKE TOUR OF EUROPE AND LECTURE ON SALMON.

It has been suggested that Col. F. H. Cunningham, Chief Inspector of Fisheries, who retires from that office on December 31st. shall make a lecture tour of the United Kingdom and the continent. To emphasize the food value of the chum and pink salmon would be the purpose of the tour, and the canners are now waiting to hear from Col. Cunningham, who has been in Ottawa conferring with Hon. C. C. Ballantyne, Minister of Fisheries. Equipped with many years experience in the salmon fishing industry and knowing salmon from the spawning period to the finished product ready for the table. Col. Cunningham is the best man that could be selected for just such a tour. In connection with the tour it has been suggested that moving pictures be used as a part of the lecture equipment.

Just at a time when a larger market is desired for the lighter colored grades of salmon such a tour would accomplish an enormous amount of good. If the market for these grades could be broadened it would mean an added value to the product of the fisheries of British Columbia, and every means should be taken to accomplish this.

Col. Cunningham is expected back in Vancouver about the middle of December when his decision will be known.

THE CANNED SALMON MARKET.

Some of the dealers in canned salmon when asked what they had to say regarding conditions of the market at the present time answered, "Absolutely nothing." After conversing with different ones that are interested from different angles, Canners, Brokers, etc., it seems as if "Absolutely Nothing" was a mighty good answer to the question.

Practically nothing moving, and the canners telling the brokers it is useless to give them any quotations as they know they cannot come back with an offer. There may be a few sales at low figures but the tendency is to hold off on any drop in prices on the lower grades until after the first of the year and see if conditions do not brighten up somewhat. All sockeyes are off the market, and it is now the lower grades that are being held.

Just now it is a quiet time in the canned fish business under ordinary conditions and with conditions as they are at present it makes things much worse. Just as soon as things get straightened out and the world conditions are in better shape the canned fish business will have an enormous impetus. Greater demand, better transportation conditions from British Columbia and a harder drive for new markets will all help to bring about this growth.

IT IS NOT GOOD SALESMANSHIP TO BOOST ONE VARIETY OF FISH AT THE EXPENSE OF ANOTHER.

In a recent press notice dated Ottawa, Dr. Edward Prince is quoted as saying "The inferior salmon which is of rich red color, brings the best price and takes first place in the Canadian Market." Why use one variety of fish as a stepping stone to sell the other varieties? All the salmon canners in British Columbia are anxious to find a larger market for the lighter colored varieties of salmon, but the feeling is that it is not necessary to knock the red meat salmon in accomplishing this.

True salesmanship lies in talking about the particular article you are endeavoring to sell and not about some other article.

Publicity is one method of advertising and advertising is printed salesmanship. The canned salmon packers are anxious to broaden out the market for the lighter colored salmon. It has been proven that the lighter colored salmon have enormous food value, and at the prices these may be had by the public they are getting one of the most economical foods obtainable. With these facts before you there is a wonderful opportunity for all concerned to build up sales talks that will ultimately create a market in Canada for both the pinks and chums that has never been dreamed of. And this may be done without once mentioning any other variety of salmon.

Dr. Prince's department no doubt can furnish very valuable information that may be used in arranging a selling talk for the lighter colored varieties of salmon and it will be found that no other variety need be mentioned.

Talk the food values of the light colored salmon, the saving in cost as compared with meat and points such as this and it will be found there is ample room for building up selling talks of comparisons without competing with any other variety of fish.

The day of the light colored canned salmon is at hand and the building up of the new trade should be handled with great care to make it sound and permanent.

IS THERE ANY REASON FOR DISCRIMINATION IN FREIGHT RATES ON CANADIAN CANNED SALMON AS COMPARED WITH U. S. CANNED SALMON.

The following figures tell their own story. It is hoped that an early change in these rates will be made. Canadian shippers of canned salmon should not be handicapped by Canadian Transportation Companies, when competing with U. S. canned salmon.

Comparative Rates.

December 10th, 1920.

70,000 60,000 40,000

United States (Seattle via G.N.R. to Phil- adelphia New York.	\$1.16½	1.21	1.42
Canada (Prince Rup- ert and Vancouver, C.P.R. and C.N.R.) to Toronto, Mont- real.	1.37½	1.42	1.58½
Canadian Excess . . .	.21	.21	.16½ per 100 lbs.
United States (Seattle, G.N.R. to Philadel- phia, New York, etc.	\$1.16½	1.21	1.42
Canada (Prince Rup- ert and Vancouver, C.P.R. and C.N.R.) to Halifax	1.60½	1.65½	1.82
Canadian Excess . . .	.44	.44½	.40 per 100 lbs.

A case of 48 1 lb. tall tins of can salmon weighs gross 72 lbs.

HALIBUT PRICES FLUCTUATE.

During the first part of November halibut prices reached 23c. per lb. at Prince Rupert, and during the last week in November the prices dropped to 10c and 6c. They are now 16c and 11c (Dec. 10th). There was a sudden glut in every port on the Pacific Coast that is in the habit of having halibut landed. Ketchikan, Prince Rupert, Vancouver and Seattle all had arrivals and all at about the same time. The result was a sudden drop in prices. The result is an averaging up of prices for the past month, and today they are back to normal. The weather has been seasonable.

CANADIAN EXPORTS TO FRANCE SUBJECT TO TARIFF DUTIES OF THAT COUNTRY AFTER DECEMBER 10th.

After December 10th all Canadian importations into France are subject to the general tariff duties of that country. This includes canned salmon and now it seems that United States firms have made sales to French firms at dumping prices. Owing to the failure of the negotiations between the Canadian and French governments for the renewal of the preferential tariff in its relation to canned salmon the Canadian canned salmon industry is at a disadvantage. It is to be hoped that the two governments may be able to come to some understanding at an early date, as the canned salmon industry is not in any too strong a position at the present time, and the placing of the Canadian packers at a disadvantage as regards the French market makes matters a lot worse.

MR. L. B. DOUGLAS RETIRES AS SECRETARY OF ASSOCIATION OF PACIFIC FISHERIES.

At the banquet given by the Association of Pacific Fisheries at Seattle on November 19th to members of the association and their friends Mr. L. B. Douglas was presented with a sword in recognition of his services as secretary of the Association. Mr. Douglas is leaving to enter the quartermaster's department of the United States Army, and it is understood will be stationed in Seattle. Mr. Douglas was one of the interested delegates to the Canadian Fisheries Association Convention held in Vancouver during June, and since then has done much to assist in bringing the cannerymen in British Columbia and Puget Sound together. Dr. E. D. Clark has been appointed Secretary of the Association to succeed Mr. Douglas. Dr. Clark will carry on his present work as Director of Pacific Fisheries Investigation for the National Cannerymen Association as well as the duties as secretary of the Association of Pacific Fisheries.

VANCOUVER WHOLESALE FRESH FISH MARKET

COD.—Supply good. Quotation Dec. 10, 14c lb.

SMELET.—Coming from Bellingham, selling at 11c per lb.

SOLES & FLOUNDERS.—Local supply arriving in good quantities and bring 8 to 10c for soles, and 5 c for flounders.

CARP.—London Fish Co. have balance shipment. Sold at 12c per lb.

OOLACHANS are looked for from Columbia River any time now.

BLACK COD (Sable Fish).—A good supply coming in.

HERRING.—Fair supply, 4 to 6c per lb.

PINK SALMON FRY SENT FROM PACIFIC COAST TO MAINE NOW SHOWING RESULTS.

The Seattle office of the United States Bureau of Fisheries has received reports from Maine that pink salmon have arrived in considerable numbers in several streams in that state. The pink salmon fry was sent from Puget Sound hatcheries several years ago and planted in different streams in Maine and for some years they have been showing up in these streams.

HATCHERY OPERATIONS ON LAKE WINNIPEG.

The Fisheries Department is having a wharf built at Dauphin river on Lake Winnipeg, in connection with the hatchery operations carried on at that place.

During a recent inspection by the Fisheries Engineer, a survey was carried out under the direction of the District Engineer of Public Works. After going into the matter fully on the ground, it was decided to locate the wharf on the site of an old existing one. The new wharf will be in the form of an ell, the shore leg being about sixty-five feet long and the other extending down river a length of one hundred feet, the width on top being sixteen feet. The construction will be close-faced cribwork filled with stone ballast, and will be carried out under Public Works Department supervision.

This wharf will provide the much needed accommodation for berthing the C.G.S. "Bradbury", which attends to the needs of the hatchery, and in addition will form a protection to the retaining crates and enclosures used for holding the parent whitefish during spawning operations.

GRANITE CREEK HATCHERY COMPLETED.

The Fisheries Department has just brought to completion the construction of a salmon hatchery on the Skeena River water-shed, which has involved difficulties of unusual nature.

The first hatchery built on this water-shed was constructed in 1902 on Coldwater Creek, a tributary stream flowing into Lakelse River, which in turn empties into the Skeena river. Owing to the nature of this stream and the fact that all the land around is alluvial deposit, constant damage was being done to the dam erected for water supply, and in 1917 abnormal freshets tore away a large portion of it as well as changing the course of the stream entirely in the vicinity.

In the face of these conditions the Department concluded it would be advisable to select a more suitable site and build a new hatchery with all the latest and most modern appliances.

A careful examination of the various streams flowing into Lakelse lake was made, and after due consideration of all conditions necessary, a site was finally located in 1918 on Granite Creek. Before any construction work could be attempted, it was necessary in the spring of 1919 to build roads into the hatchery site. The country is heavily timbered and it was necessary to cut a considerable portion of this road along the steep side hill of the creek banks, which involved heavy rock work and grading in addition to the clearing.

Considerable progress was made in construction during the summer of 1919, but the work was impeded owing to an abnormally wet season which rendered the roads practically impassable at times. The general labour situation also tended to impede progress, materials often being delayed in transit and contractors unable to fill orders owing to strikes. As soon as weather conditions permitted, work was resumed in the Spring of 1920, and the construction brought to completion during the summer.

The hatchery at this station is a building 40 feet by 110 feet with ell 16 feet by 20 feet, walls 10 feet high and roof carried on ten trusses. The hatching equipment includes one hundred and twenty hatching troughs having a total capacity of ten million eggs.

The hatching troughs are arranged in two rows, the full length of the building, with a passage-way or aisle between. The usual floor-gutter that is used to carry off the water is in this hatchery designed so that it can be utilized for holding and feeding fry and older fish. It is, therefore, in the form of a concrete tank 110' long, 6' wide, and ranging in depth from 18" at the upper end to 2' at the outlet. This tank increases the fry capacity of the hatchery to a considerable extent.

The other buildings include an officer's dwelling, which is a four room bungalow, 25' 6" by 30', a dwelling for the staff, a two-storey, seven-room building, 25' by 30', and a boat-house at the lake shore with landing stage for the accommodation of the hatchery boat.

All the buildings are constructed with concrete foundations and the hatchery with concrete floor throughout. Both dwellings are complete, with basements, hot air furnaces, and sanitary plumbing.

All the work in connection with this construction was under the direct supervision of Mr. J. T. McHugh, fisheries resident engineer for British Columbia, to whose effort, in the face of adverse conditions, the

credit for carrying them to successful completion is due.

Most unfavourable conditions were met with during the collection of eggs. With a view to greater permanency the fences were built considerably stronger than they ever had been in the past. Heavier material was used with extra heavy braces on the downstream side. The fences were further secured with wire guys from the top of the fence to dead heads on the up-stream side. The fences were also one foot higher than the old ones. Notwithstanding these precautions abnormal freshets over-flowed or washed out the fences, allowing the salmon that had been retained below them to ascend and disperse to the upper parts of the streams, where they could not be secured. The fences were replaced as quickly as possible, and owing to the untiring efforts of the Superintendent and his staff the satisfactory collection of 7,734,000 sockeye eggs was made. The average collection previous to the present year was approximately four and a quarter million.

The story that made millions laugh—that one which includes "Thunder! Thar haint no sich animal!"—has we think, a pretty good running mate in the following more recent one. A countryman was standing on a fish pier where the day's catch was being landed. Presently a swordfish of monstrous size was hoisted up and the old fellow stared at it in wonder and amazement. He positively could not believe his senses, and when at last he recovered himself sufficiently to speak it was only to exclaim:—"The man that caught that fish is a darn liar!"—(Boston Transcript.)

HATCHERY NOTES.

The collection of whitefish eggs in Lobstick and Whitefish Bays, Lake of the Woods, for the Kenora hatchery was brought to a sudden close by the freezing up of the bays on November 17th. The operations were carried on in comparatively shallow water and the bays at these points froze over in one night to an inch in thickness.

Owing to the unusually mild season the fish did not develop as early as usual. Great success was obtained, however, in the matter of egg collection, 54,000,000 being taken in these areas. In 1914 the collection was only 10,000,000, and the previous record was 50,000,000 in 1918.

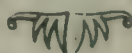
Egg collecting operations at Dauphin River, Lake Winnipeg, were also brought to a sudden close by a snowfall and a severe frost on November 17th. At that time the crates and pound-net pots in which the parent fish were retained were covered with a coating of about 5 inches of ice. Despite the forced closing results were very satisfactory, 328,700,000 whitefish eggs being obtained. This collection filled the three hatcheries in the district to capacity, and in addition left a surplus of 24,000,000 eggs which were sent to the Kenora hatchery. The Dauphin river camp is one of the most successful egg-collecting stations operated by the Fisheries Branch.

Upwards of 50,000,000 whitefish eggs have been collected at the mouth of the Waterhen river, and placed in the Winnipegosis hatchery on Snake island. The lake froze on November 12th, and for four days previous the weather was cold and stormy, preventing operations. The number of eggs collected here was three times as great as that of last year.



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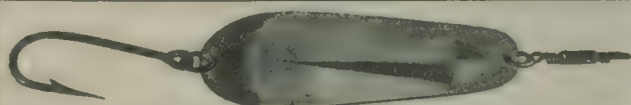
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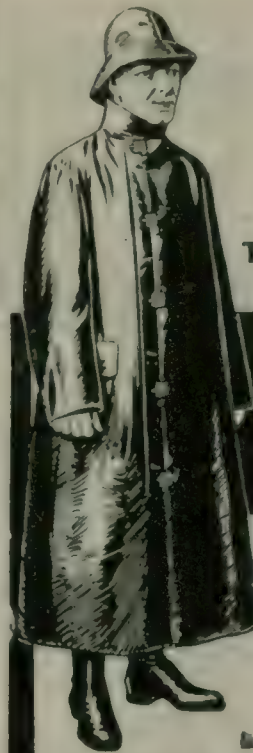
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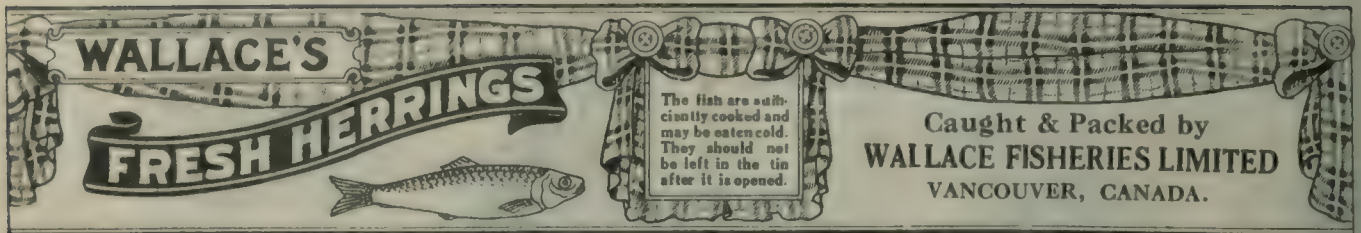
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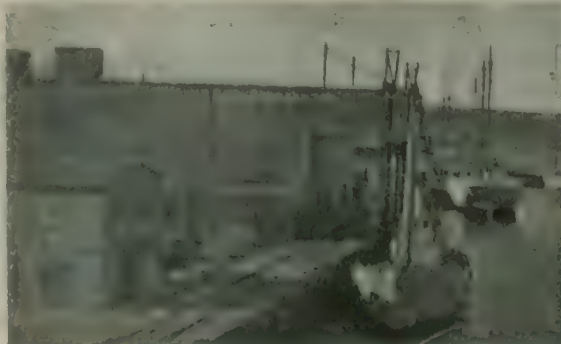
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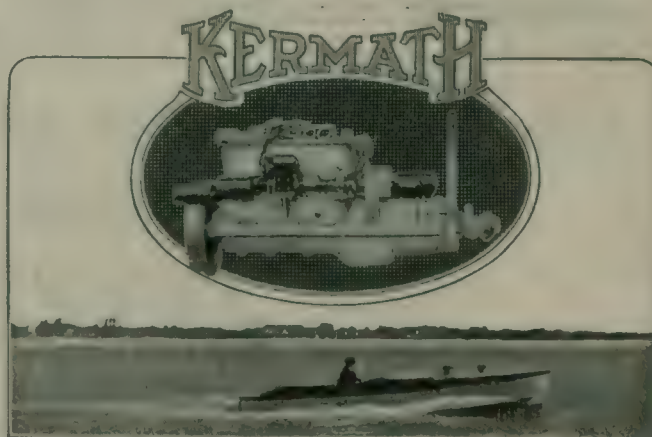
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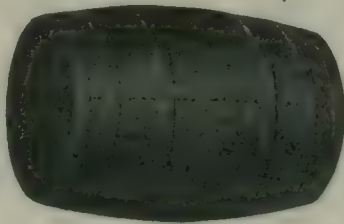
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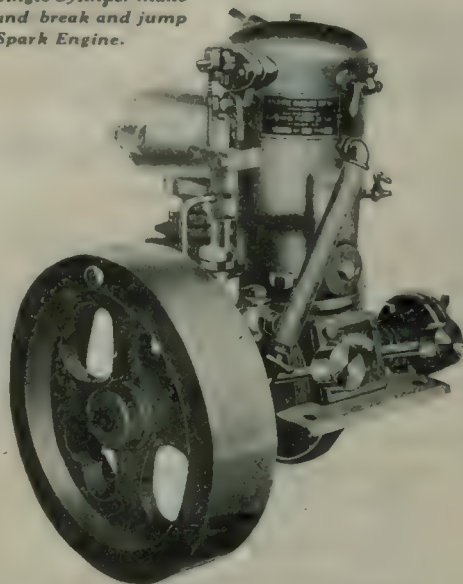
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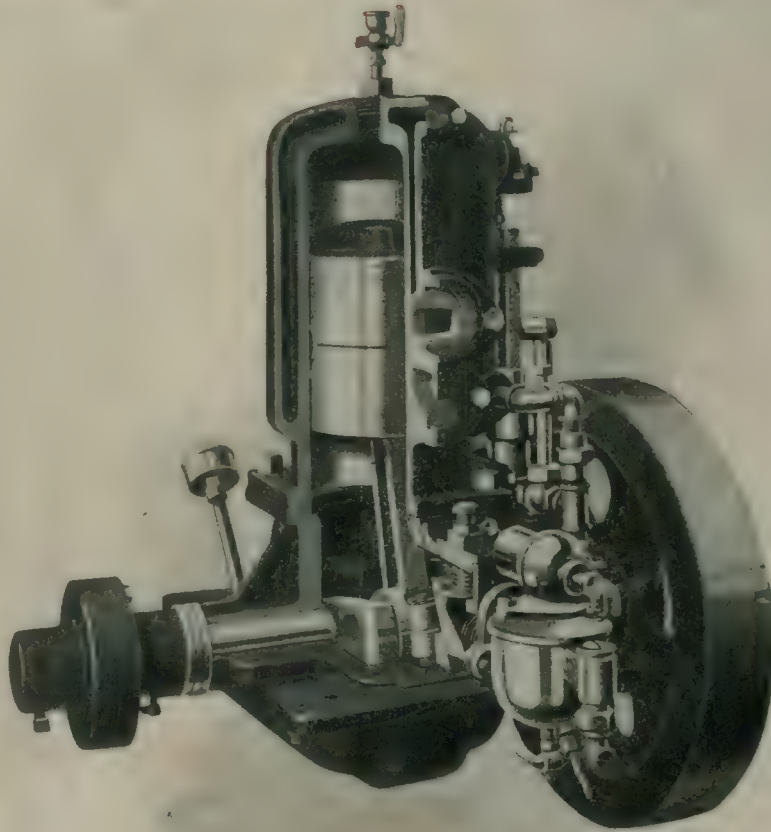
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